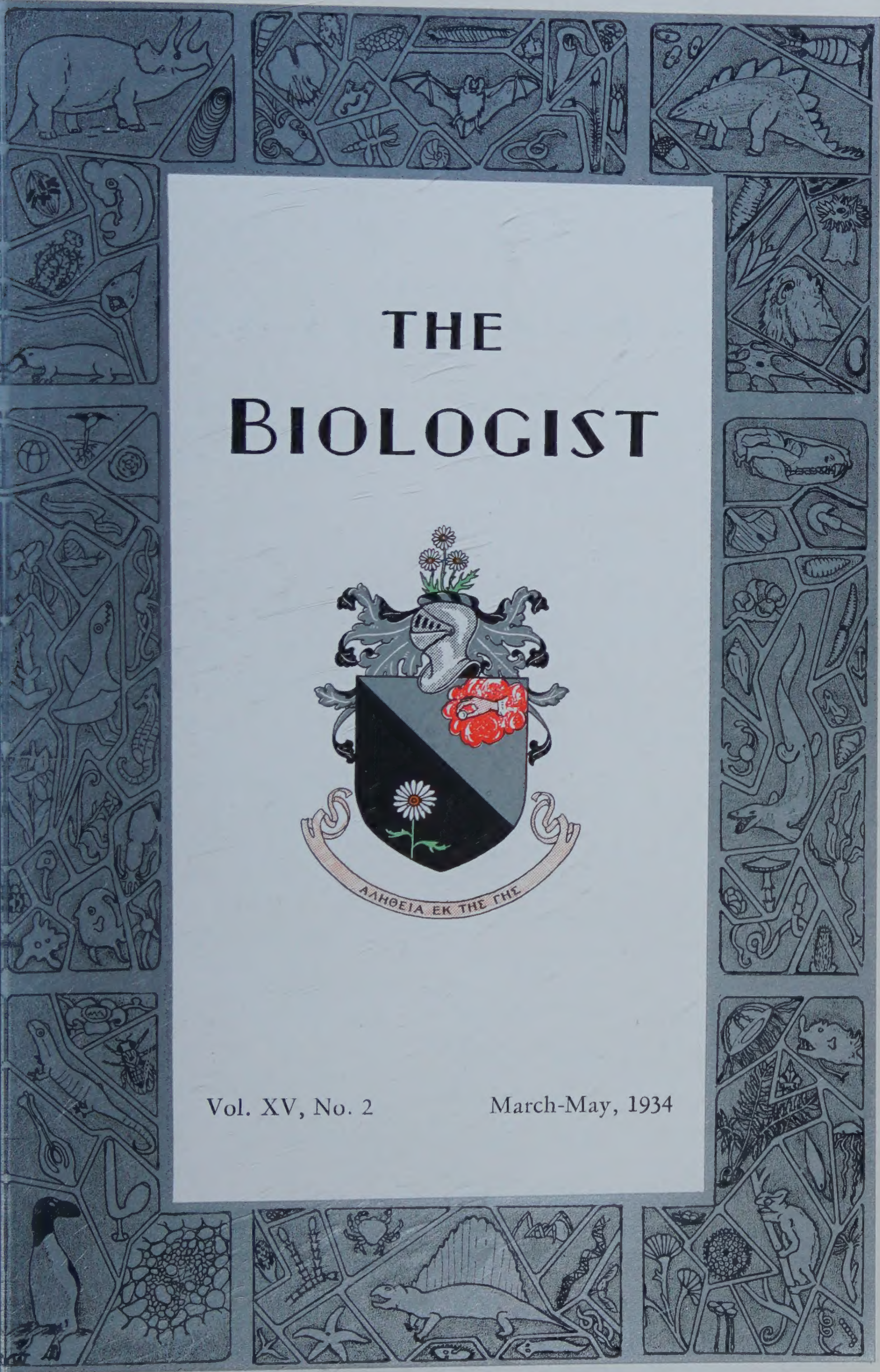
"WHAT IS A PARASITE?" . . . . . By DR. DAVID CAUSEY



THE BIOLOGIST

Vol. XV, No. 2 March-May, 1934

"BIOLOGIST'S PHILOSOPHY" . . By DR. ARTHUR S. PEARSE

THE BIOLOGIST

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WHO'S WHO
In This Issue

Arthur Sperry Pearse: "A Biologist's Philosophy of Life."

A Nebraskan by birth and education, Dr. Pearse took a Harvard Ph.D. in 1908; taught successively in Nebraska and Illinois high schools while working for his degrees. After Harvard he held positions in the Universities of Michigan, Philippines, St. Louis, Wisconsin and Duke. A tireless investigator at his best in the field, he has been in many an expedition, earned many honors,—none more significant than the love of science he implants, stimulates and ripens in all his students, in spite of his unprepossessing unconventionality in the classroom. Has several books on ecological subjects which represent only a small part of his amazing acquaintance with living forms. An enthusiastic member of Phi Sigma,—as well as a number of other scientific organizations,—he was the banquet speaker at the New York Convention of the Society.

David Causey: "What is a Parasite?"

Graduating successively from Milliken, Illinois and California, the author held instructorships at Vanderbilt, Princeton, and now a professorship at Arkansas. A native of Alton, Illinois. Belongs to several learned societies, including Mu chapter of Phi Sigma. His chief work,—"Uninvited guests,"—tickled the risibilities of Edwin Grant Conklin, Princeton's great biologist, and stimulated an enthusiastic commendation. Causey belongs to the school of Fabre,—plus a divine sense of Humor.

Nelson Beeler: "Scientific Love."

A teacher in Adams (Massachusetts) High School, Beeler is no Phi Sigman, but possesses the happy faculty of being able to catch the rhythmic swing of scientific terminology, and a sly humor with which to play upon it. Beeler is somewhat of a physicist, and spends his more affluent summers at Columbia University.

Arthur Isaac Kendall: "New Days and Old."

A research professor of bacteriology and hygiene, at Northwestern since 1928, Kendall is a New Englander, educated at M. I. T., Hopkins, Harvard and Southern California. Gained valuable experience in Panama, and Rockefeller Institute. Taught at Harvard Medical, Northwestern's Patten Foundation, Washington University, where in 1927 he became a member of Iota Chapter of Phi Sigma. Writes well and often, but has the genius to be dissatisfied with his own work.

A BIOLOGIST'S PHILOSOPHY OF LIFE

By Dr. Arthur Sperry Pearse,

Duke University, Durham, N. C.

A BIOLOGIST is proud of the achievements of science, but humble before the mysteries of nature. He respects truth more than authority. He rates evidence above theory, but nevertheless attempts to progress by the use of constructive imagination. He strives to be open-minded, tolerant, critical but kindly, courageous but cautious. He looks forward cheerfully to a life of hard work and expects to be methodical, painstaking, accurate, persevering—and modest because he believes that his profession is most honorable and that his own carefully-considered endeavor is worth while. He feels an obligation to keep alive by study, discussion, and thought. If he attains honor, he has ideals, ambition, wit, and common sense and is somewhat a gentleman of culture. Like any man he needs an avocation, but he must seriously attend to his business in life and plan to be the best possible in his chosen field—industrious, well informed, thoroughly trained, alert and active; a swimmer, and not a floater.

A biologist thoughtfully chooses a field in which he can raise problems. He fertilizes his plots with carefully tested mixtures of thought, knowledge gleaned from books and journals, suggestions from colleagues, and eternal painstaking. He waters them with the sweat of his brow. When some of his cherished projects flower and bear fruit, he is glad—and writes a paper or discourses. Perhaps his friends say, "It is good. This man has added to the sum of knowledge. Up and on!" This is his reward.

WHAT IS A PARASITE?

By Dr. David Causey,
University of Arkansas, Fayetteville.

> *"The parasite is he whose profession it is to live at the expense of his neighbor, and whose only employment consists in taking advantage of him, but prudently, so as not to endanger his life. He is a pauper who needs help, lest he should die in the public highway, but who practises the precept—not to kill the fowl in order to get the eggs. It is at once seen that he is essentially different from the messmate who is simply a companion at table. The beast of prey kills its victim in order to feed upon his flesh, the parasite does not kill; on the contrary he profits by all the advantages enjoyed by the host on whom he thrusts his presence."*
>
> —*Van Beneden.*

SUPPOSE that you become aware of a distinct enlargement of the abdomen, an abnormal growth not to be attributed to a wave of prosperity. And, supposing some more, you come to the surgeon's table, and he removes the growth. Being curious, as surgeons are, he dissects your tumor and is able to cheer you in your convalescence by informing you that your trouble was a twin brother—a shiftless lad who had fallen into evil ways and was letting you do all the work in this business of living. That twin of yours might have been anything from a fairly well-formed individual down to a mere mass of tissues with odds and ends of epidermal derivatives such as teeth and hair. Was that twin a parasite?

Put it another way. It is possible that you, back in those fetal days of yore, actually stole his birthright, encroached upon his sacred rights to a placental food pipe unhampered and unmolested. Maybe you literally starved the poor might-have-been fellow, stealing the body building nutrients which were truly his, and which would have made it possible for him to express himself. We might modify the question and ask which was the parasite?

Again, just what was your relationship as a fetus to your mother? A normal relationship, surely, in no way unusual in this world of ours. However much of a pride and a joy forever you have turned out to be, the simple fact remains that at that time you were a most uncomfortable and disturbing intruder, an unexpected guest who paid neither board nor room rent, and ungratefully caused her much discomfort and annoyance. Indeed, if one casts an eye toward maternity statistics, you seriously threatened her very existence. We need not dwell upon the post-natal nursing and sundry care you required, nor the wrinkles and gray hair your adolescence gave your parents. Honestly now, were you a parasite in those fetal days?

This is a bit too personal to be comfortable. Let's look elsewhere. The ceratioid fish will serve. They certainly are far from us. They have a strange custom. The lady caratioids wear their husbands, insignificant little fellows, very much attached to them. In one case the husband was found fastened on just over the fair lady's right eye, where, truly, she could keep an eye on him. He, poor chap, is literally grown fast, has no mouth and no digestive system. Literally, he lives on his spouse. Is he a parasite?

What shall we say of Darwin's barnacles with their complemental males, degenerate also in lacking alimentary canals? Darwin tells of one case where the lady barnacle had two pockets in her shell, and a little husband in each! The complemental male would be helpless if thrown out to shift for himself. Is he a parasite? And what, pray tell, shall we do with *Bonellia,* in which the degenerate male, sans mouth and sans anus, lives within the nephridium of the female? A parasite?

Leaving such perplexities for the moment, let us consider another type of relationship. We know, of course, that a carnivore is one who hunts down his prey, kills it cleanly and gorges himself upon it. Pussy creeping up on a bird is an example of this carnivore-prey association. A close student would tell you that the carnivore, while preferring some one prey, is cosmopolitan in his tastes and will attack a number of different animals.

How about the giant vampire bats of South America, commonly sucking the blood of the larger animals, horses and cattle in these days of the white man, but at times getting that satisfying meal of hot blood from a human sleeper. Is the bat a carnivore or a parasite? Right at home we have the mosquito, the female of which hunts us out, and after a fair warning, settles down in some unguarded spot for the same purpose. She has no especial predilection for us; in fact, appears to favor some of the domestic animals to us. Is she a parasite? And what say you to the cases of the tick, the louse, the flea, the leech, the . . . , but surely we have raised sufficient examples to indicate that the definition is not easy.

The defining of a parasite is a profoundly ecological problem, a matter of animal relationships as complex as any involving the biological patterns in the cloth of life. The mere presence, occasionally or habitually, of one organism on or in another is no test of parasitism. Surely a bird nesting upon or within a tree is not parasitism. Green algae in a sloth's hair do not appear to be of more significance than the same algae growing on a tree trunk, or even of grass seed in the traditional yokel's hair. The one merely provides, and fortuitously so, a set of environmental factors which the other can use, but there is no dependence of one upon the other. On the other hand, the association may be a mutual benefit compact, as in commensalism, to be broken at the whim of either partner; or it may be an obligatory partnership as with the symbionts, where their very lives are interdependent upon each other's welfare. Two horses hitched to a wagon give us another animal association which fails to fit any of these; while the owner who exploits the horses gives us additional difficulty—is he a refined type of parasite?

I would define a parasite as a known organism, living upon or within another organism (the host), the parasite gaining by the association while the host loses. To avoid metaphysical hair splitting, I would qualify this gain and loss to be physiological and not psychological. Some of my colleagues might otherwise maintain that the famous louse Burns watched wrought a mental loss upon its fair owner when she discovered its manifestations in public!

The parasite is a known organism. Nonsense? By no means, since it at once eliminates the factor of mystery and black magic. A moment's reflection will suggest a number of human ills which are loosely attributed to "parasites," but for which no actual parasites have been found. The common cold may be due to a bacterial parasite, so may encephalitis and pellagra, while pyorrhea and smallpox may be caused by protozoans, but what gain have we when the demonstration is lacking? Better confessed ignorance, that first step toward knowledge, than loose misinformation which may bias an investigator's efforts and waste his time. So I insist that the parasite must be a known organism, a something actually found, capable of being studied, measured, and experimented with.

It must live upon or within the host. Deny this and what valid distinction can we draw between the carnivore and the parasite? We tend to think of the carnivore as being large and its prey as small. But the bloodthirsty weasel, which one could drop into his pocket, works havoc with rabbits, far larger than itself.

The parasite must definitely harm its host—work a physiological damage or hurt. Of all the animal associations only the parasite injures its partner by its presence and activities. Strictly enforced, this last factor would limit our lists of parasites surprisingly. There are few parasites whose baneful influence have been clearly and sharply demonstrated. There are many maybe parasites known which probably damage their hosts. It is with these latter that the parasitologist is, or should be, working. Better by far the clean-cut proof that one organism is a parasite and just what its ravages are than a host of newly described maybe parasites about whose physiological effects we know nothing.

The tumor-twin was a parasite. It meets successfully all the criteria. It could not shift for itself, but the individual from whom it was removed, no longer subject to its physiological drain, does better than before. So is the human fetus. To the possible objection that they are of the same species and so could not be parasites I would submit that parasitism is a profoundly fundamental biological relationship between organisms, and a ''species'' is a purely human or man-made concept. You may say that the fetus-mother relationship is a normal phase in the life cycle. But normal and abnormal are rather meaningless terms, a matter of opinion and of occurrence. I am prepared to maintain that everything is normal as it is the result of the orderly laws of nature; and one must confess that in general, if regularity of occurrence were a criterion, being parasitised is the ''normal'' condition for most hosts.

These criteria will differentiate between carnivores and parasites. The vampire bat, the female mosquito, the tick and the leech are truly carnivorous animals. While they attack their prey and do more or less damage without immediately killing, yet they do not live upon or within their prey and so are not parasites. As to lice and fleas—do they not attack and retreat, the lice residing in a non-living environment such as one's clothing or immediate surroundings to approach the host merely at mealtime? And fleas are as often in the dog's bedding as in his hair. They are as much carnivores as a pack of wolves living amidst a herd of buffalo.

For practical purposes, then, we may clearly distinguish parasites from ''members'' of other types of associations. It may, however, be well to recall that any labels we give to Nature's ways are artificial. We might put two marks on a spectrum and say that between them was the color yellow, but we know that the spectrum shades imperceptibly from one ''color'' to another. Nature recognizes none of our distinctions as necessarily valid. However wisely we may talk, she follows her paths as unhesitatingly as the night follows the day.

SCIENTFIC LOVE

By NELSON BEELER
Adams, Mass.

Let sentimental morons sing of birds and bees and flowers,
Of over-rated sex life in secret, shady bowers,
My love songs are of chromosomes and suprarenal powers,
For I'm very scientifically in love.
Let others read the passioned glance that beams from maidens' faces,
(It's probably from over-work, or hypochondriasis,)
I'll take my mate's affections on a strict genetic basis,
And continue scientifically in love.
The poets warble to the moon,—no other sphere will serve,
While there's just as much of beauty in a parabolic curve,
And love, as such, is nothing but a hypertrophied nerve.—
Yes, I'm very scientifically in love.
Yet while I stay at home, to prove true love a sham,
A pathogenic action in the endocrinal plan,—
Normal folks keep right on loving, and it isn't worth a damn
To be very scientifically in love.

NEW DAYS AND OLD

By DR. ARTHUR I. KENDALL
Northwestern University, Evanston, Ill.

RIDING in a bus, not so very long ago, I could not help overhearing parts of a conversation between two middle aged men, obviously college professors. Their conversation had to do largely with the future of universities and of education in this country. One comment in particular struck me forcibly: "We are entering upon an era of low living and high thinking. How long this may lost, and what its effects may be upon our educational system cannot be forseen at the present time".

Educational systems in foreign countries have suffered much from the world wide depression, and it is not at all improbable that the shock will be felt more and more by the educational institutions of the United States as well, although the teachers in these institutions have had little or nothing to do with the imbroglio. As Spinosa aptly expressed it, at another occasion—"One who goes mad from the bite of a (rabid) dog is excusable; yet it is right that he should die of suffocation". If all this be true, it would seem that those still remaining in colleges and universities must have no small part of their guerdon in that which money does not buy, and adversity does not appropriate,—the enjoyment of work. And enjoyment of work is not necessarily restricted to one's professional field; it may well have its origin in quests apparently far remote. This is exemplified in an incident that occurred not very long ago.

A small fragment of very fragile fabric was brought to the laboratory. It was found in an *aënaeolithic* child burial in Asia Minor, from the country of the Hittites. It was unearthed during the excavation of a very ancient ruin, the lower layers of which are of the Neolithic Age, some 3500 years before the Christian Era. It was to be examined for its fiber content. The study of textiles found in prehistoric and neohistoric building sites is not merely an academic problem. It is part of the story of mankind, of his struggle to clothe himself with the harvest of the field in place of hides and skins retrieved from the chase. This is a step in the evolution from nomadic to settled existence. It is also an indication of the beginning of a machine age,—looms, however primitive, are mechanical devices designed to perform an operation of some complexity. The particular bit of fabric under discussion fell into fragments with the least handling, but enough of its structure could be made out with low magnification to indicate its nature,—a woven texture. Micrometric measurements of the bits of fiber that could be seen with somewhat higher magnifications suggested a provisional diagnosis of flax. By this same procedure other plant fibres could be ruled out tentatively. Fibres teased from mummy cloths (Egypt, 5th and 6th dynasties, 2750-2500 B.C.) were next examined in the same manner, and revealed a close agreement both in diameter and in general appearance with the aënaeolithic fibres,—a further suggestion, but of course, not proof, of their botanical identity. Finally, a few fragments of twisted fibres (bits of thread) were obtained. These were so badly broken little could be learned of the actual number of fibres in each, but they were sufficiently definite to indicate their character, and their relation to the fabric itself. Summing up the evidence, the conclusion was drawn that this very ancient bit of material was linen, that there was probably no admixture of fibres other than flax itself.

This very fragmentary description is not intended to be a pattern for scientific investigation, nor is it a dissertation upon fibres, ancient and modern. It is merely a greatly abbreviated account of an exploration into the dim past, with very simple tools, and the unfolding thereby of romance Who does not respond to the challenge of this bit of primitive material, the handiwork of primitive man, just entering upon the complexities of machine civilization with its problems of intimate human relations? Possibly they sighed for the good old days, even then, when the family or clan, disappointed with their neighbors or endangered with the accumulation of human wastes, moved to pastures new.

And our world teems with interesting problems. Half a century ago many British clergymen were distinguished biologists. They took time out to study the forms of life with their microscopes as well as time in to attend to the spiritual needs of their parishioners. Possibly such a revival of interest would pay large dividends in unalloyed pleasure today.

NATIONAL RESEARCH FELLOWSHIPS

Among the forty odd appointments to fellowships for biological studies either at home or abroad recently announced by the National Research Council, some ten members of Phi Sigma have been found by reference to our past directories. There may be more, since the only check we have is the last published membership list of 1930-31. At that, to have among our membership one-fourth of those singled out by the N. R. C. for these prized fellowships is a source of satisfaction to all Phi Sigmas. Members so honored are:

REAPPOINTMENTS FOR DOMESTIC STUDY

David R. Goddard, (Mu '28)—Botany; Carter M. Harrison, (Zeta '27)—Agriculture; Luzern G. Livingston, (Alpha Delta '29)—Botany; H. Burr Steinbach, (Beta '27)—Zoology.

NEW APPOINTMENTS FOR DOMESTIC STUDY

Kenneth F. Baker, (Alpha Theta '30)—Botany; Robert F. Chandler, Jr., (Delta '28)—Forestry; Milan James Kopac, (Xi '24)—Zoology; Edwin B. Newman, (Kappa '28)—Psychology; Theodore C. Scheffer, (Psi '28)—Forestry.

NEW APPOINTMENTS FOR FOREIGN STUDY

Jay Laurence Lush, (Zeta '19)—Agriculture.

THE COUNCIL MEETS

NATIONAL OFFICERS DELIBERATE IN DENVER

THE Lambda Chi Alpha Lodge at Denver University was the scene of the National Council's deliberative gathering on March 15, 16 and 17 last. All members were present,—the Chancellor, Dr. Paul A. Warren of Tufts College, Medford, Mass.; the Vice-Chancellor, Dr. Melville H. Hatch of the University of Washington, Seattle, Washington; the Secretary, Dr. Arthur I. Ortenburger, of the University of Oklahoma, Norman, Okla.; the Treasurer, Mr. Erwine H. Stewart of Mesa, Colorado; The Editor, Dr. Anselm M. Keefe of St. Norbert College, West De Pere, Wis., also attended.

CHANCELLOR WARREN

The Council arrived in Denver practically simultaneously, and by early afternoon of the fifteenth were in active session. Deliberations were extended far into the night. Friday morning was devoted to an inspection of the campus and buildings of the University of Denver, but the most interesting part of the time was the meeting with so many of the leaders of the faculty. Another session convened before the lunch held with faculty members at the Buchtel Club. Following this the Council were taken by Dr. Ira Cutler, formerly National President of Phi Sigma, and by Dr. H. G. Owen of the university department of zoology, on an extended sightseeing trip through the city of Denver.

Friday evening the Council were the guests of Epsilon Chapter at a delightful banquet in the Lambda Chi Alpha Refectory. This was followed by a reception which lasted far into the evening.

Saturday morning was devoted to a closing session of the Council, and after a motor trip up Lookout Mountain to the grave of "Buffalo Bill," the National Officers separated until the next Council meeting.

SPECIAL MATTERS CONSIDERED

A large portion of the Council's deliberations was devoted to the private affairs, difficulties and problems of some seven chapters whose situations seemed to need attention. Two chapters were formally commended for the splendid way in which they had met certain special situations.

One chapter which had enacted a lengthy supplementary constitution which at times was at variance with the National Constitution, was advised that Chapters could have supplementary, not contradictory, By-Laws, and that the Constitution and By-Laws were for one and all the Chapters.

Several Chapters had neglected to acquire the model key and coat-of-arms necessary for carrying out the ritual correctly. They were requested to comply with the customs now in force in most chapters.

Three different chapters having been solicited at different times by the same person, a sort of wandering biologist who is not mentioned in the American Men of Science, but who seems to be intent on getting into Phi Sigma for some reason or other, these chapters were advised not to place much confidence in itinerant key-annexers.

GENERAL MATTERS CONSIDERED

Following the problems of individual chapters, the Council turned its attention to the affairs of the Society as a whole.

The first matter considered was the National Presidency which had become vacant due to the expiration of the four year term of Dr. Alexander Ruthven, President of the University of Michigan. The Council unanimously voted to continue Dr. Ruthven in office for another term.

The Council next sought to clarify the qualifications for honorary membership. These were determined as follows: Honorary Members are scientists (1) whose reputation is national, not merely local, (2) whose election must be an honor to the Society as a whole, and (3) who will not take an active part in local chapter affairs. Scientists who do not come under these requirements should be elected to faculty or active memberships. Furthermore each prospective honorary election must be proposed to the Council at least two months in advance of the time set for the proposed initiation. This will give the Council members time to vote on the election or rejection of the honorary member proposed by the chapter.

It was decided that the policies and scholastic programs of teachers' colleges disqualified them as sites for future chapters of Phi Sigma.

Due to the condition of the times, and the financial conditions of the chapters, it was agreed that a national convention would not be possible next December. It was further decided as a result of the experience at the Atlantic City meeting not to hold scientific sessions unless the national convention were meeting.

Financial tangles have inevitably risen under the provisions of the present ritual which permits students to be initiated without any reference to their financial ability to meet obligations. In order to remove this prolific source of trouble a change in the initiation procedure was adopted whereby future initiates will pay their fee before the initiation ceremony.

Still further to obviate difficulties and misunderstandings it was decided that the Secretary will issue no further membership certificates until the initiation fees pass through his hands on the way to the Treasurer. Here-to-fore the Treasurer received the fees and the Secretary's office sent out the certificates, and it was sometimes months before an exchange of letters discovered discrepancies between the number of people initiated, and the number of fees paid.

A final decision regarding initiations was that one chapter may, and should in case of necessity, initiate prospective candidates for another chapter.

ORTENBURGER AND HATCH

EXPANSION POLICY

A decision of far-reaching importance to Phi Sigma was the carefully considered policy of expansion unanimously adopted by the National Council at the Denver meeting. This expansion program has a two-fold object: First, to increase the active membership in each chapter. Second, to increase the number of chapters.

The purposes of this project are: First, to put the individual chapters back upon a surer footing, with a larger, more varied, more interested and better paying membership. Second: By establishing new chapters in a number of carefully selected schools to make the Phi Sigma key a better known badge of the fellowship in biological interest and research. Third: With larger and more widely spread chapters to approximate more closely the position of the other scientific societies in the American Association for the Advancement of Science, with which

Phi Sigma seeks to stand on equal rank as an affiliated organization.

While this policy will be successful in so far as the chapters co-operate in its main features, new suggestions will undoubtedly arise. They will be welcome, and should be communicated to either the National Secretary or the Editor of the BIOLOGIST for the new department of personal letters, known as "Anabolics". The points on which co-operation will materially assist in expanding Phi Sigma are: First, to plan an aggressive campaign for worthwhile members. This may mean a study and re-organization of the whole set-up in the schools—programs, membership (student, faculty, and alumni)—so that, by reason of the values a chapter has to offer, old members may return to paying membership, and new prospects may be attracted to the society. On this last point—selection of members—the chapters should be more liberal in their interpretation of the qualifications for membership—and less free in the use of votes excluding candidates. The National Council wishes to give added impetus to a process of simplification which should be the key to chapter procedure. Second: To assist the National Council in stimulating active biological groups in other institutions to apply for Phi Sigma membership. Chapter alumni can be powerful agents in the successful development of this feature in the expansion project.

THE EPSILON CHAPTER BANQUET

The Friday evening banquet at the Lambda Chi Alpha house was a memorable affair. All the present members of the Council were there, —so was the Editor, so also the past National President, Dr. Ira E. Cutler. Several members of the University of Denver Faculty were guests. The entire membership of Epsilon Chapter and many of its Alumni members helped to swell the number which filled the gracious dining room of the fraternity house.

Erwine Hall Stewart, National Treasurer, an alumnus of Epsilon Chapter, acted as toastmaster. By skillful introductions he kept the program running smoothly to its close.

Dr. Ira E. Cutler, head of the Zoology Department, welcomed not only the National Officers officially, but also extended greetings to the many other guests of Epsilon Chapter at the dinner.

The National Chancellor, Dr. Paul A. Warren, in his speech reviewed some of the past Council meetings as an introduction. He next emphasized the spirit that animated the present sessions,—how there were no two alike in the 32 active chapters,—and how each one varied in size, interests, attitudes,—so that the chief activity of the Council was to assist the individual chapter as far as possible while still safeguarding the interests of all the other chapters. Regarding the expansion project, Dr. Warren pointed out the signs which seemed to indicate the imminent prospect of an intellectual if not financial era of prosperity. Every man is proud to belong to a large fraternity, as long as its standards of membership are high. Continuing in his announcement of new policies, Dr. Warren paid the respects of the Society to the American Association for the Advancement of Science, and advised every member of Phi Sigma to cultivate the habit of attending its meetings, especially the midwinter sessions.

STEWART HATCH WARREN ORTENBURGER KEEFE

Dr. Melville Hatch of the University of Washington, Seattle, was next introduced by Mr. Stewart. In a short but interesting talk the newest member of the Council gave some of his impressions as a newcomer on that body, and appealed to all chapters to support it as the one unifying force in the Society among so many varying types of chapters.

Dr. A. I. Ortenburger of Oklahoma University in his talk proceeded to enlighten his hearers about some interesting past events in the lives of the Chancellor and the Secretary, who were classmates and fellow members in Phi Sigma. He then discussed the duties of the National Secretary's office in correlating the work of the chapters and their officers. Following his remarks Dr. Ortenburger gave a very vital message to all the guests on the importance of a real research attitude in college life.

The Editor of the Biologist, Dr. Keefe, was next called on by Mr. Stewart, and promptly turned the tables on all the previous officers who had been directing their humorous remarks in his direction. Finally turning from jollity the Editor painted a word picture of the founders of modern science and made a plea for a return of the ''gemutlichkeit'' which characterized the older school of scientists. Voicing his feeling that science is dynamic, not static, the speaker prophesied great and greater things to come from the younger scientists, if they could only develop a sense of humor, a joi de vivre, which would save them from falling into the all too common dogmatism which afflicts over-serious research workers lacking in the saving faculty.

FINDS HOUSE CENTURES OLD

ARCHEOLOGIST DISCOVERS RUINS ON MESA IN EASTERN ARIZONA

(From The Milwaukee Journal's New York Bureau)

New York, N. Y.—There were houses in this country more than 1,000 years ago. On a mesa in eastern Arizona, overlooking the Puerco River valley, Dr. Frank H. H. Roberts, jr., of the Smithsonian institution, has discovered the charred ruins of a house which scientific calculations show, he said, is more than 1,000 years old.

Under the fallen roof of the house he found cooking implements in a very good state of preservation. The position of the household articles indicated to Dr. Roberts that the family was forced to make a hurried retreat to escape from the fire which destroyed the interior.

In his report to the Smithsonian institution the archeologist says the structure was of the pithouse type and dates from the Pueblo I period. The site was occupied previously by the basket makers, but their remains can not be dated. Dr. Roberts is engaged in showing the beginnings of the Pueblo culture and tracing its growth through two subsequent periods.

ONE-FAMILY HOUSES

A series of trenches dug in various portions of the site, he reports, demonstrates that during the early stages of Pueblo history the people lived in a straggling village of single-family houses. These dwellings were semi-subterranean in structure and had been scattered about with little attempt at order. It was from one of these houses that the datable timber was obtained.

As time went on the domiciles were placed in more compact groups and a system of arrangement developed. Later the pit type of house was given up and buildings were erected above the ground. Ultimately two large communal houses capable of sheltering many families evolved. These last structures occupied only a small portion of the area covered by the earlier village.

The burned house, Dr. Roberts reports, was typical of the type from which the great pueblo structures evolved.

These houses consisted of a circular, oval or rectangular excavation roofed over with a pole, brush, bark and plaster superstructure. The earth walls of the pits were covered with plaster made from adobe mud in which there was a slight admixture of ashes. In one case Roberts found the walls lined with large stone slabs set up on edge. Resting upon these slabs and rising some distance above them were several courses of rough masonry. The pits ranged from two to six feet in depth and 10 to 20 feet in diameter.

FRAMEWORK WAS FORMED

The superstructure erected over the pits was supported by four upright posts set in the floor a short distance from the walls. The upper ends of these supports were forked, in most cases tree trunks with suitable crotches having been obtained for the purpose, and carried crossbeams. These formed a rectangular framework against which were placed the upper ends of smaller timbers, the butts of which rested on the ground some distance back from the edges of the pit. The slanting poles formed the main part of the upper walls of the house.

At the top the rectangular space was covered with a flat roof, with an opening near the center which functioned as a smoke hole and entrance.

The entire framework was covered with brush, leaves and strips of cedar bark. Over this a thin layer of mud plaster was spread and over all there was a thin coating of earth.

Each house of this type, Roberts reports, had a fire pit directly under the opening in the roof. Each also had a ventilator so constructed that a constant supply of fresh, cold air was drawn into them from the outside.

Dr. Frank H. H. Roberts, jr. is at present with the Smithsonian Institution in Washington, D. C. Dr. Roberts is a 1923 initiate of Epsilon Chapter.

EDITORIALS

"MY FRATERNITY PIN"

IT is the fate of almost every worthwhile movement that it is promptly made a shield for covert,—and not so covert,—attacks on establishments which, probably because they have been successful in their fields, have incurred the enmity of their competitors. The N. R. A., no matter what its merits or demerits, has thus afforded an untold amount of ambush for the disgruntled to snipe at every and all types of successful business ventures.

No more flagrant example of this very procedure has recently come to light than the attacks now being directed at some of the major fraternity jewelry concerns in this country. These successful concerns have undoubtedly built up a large and healthy business by catering to the needs of the social, honorary and professional organizations in and out of college. They have, on the whole, treated these organizations fairly, and,—what is more to the point,—afforded each fraternity and sorority an opportunity to keep its official insignia out of unauthorized hands. This is the point we would like to stress. It is vitally important to each such group that its rights to its own insignia be safeguarded. If every little jewelry jobber is enabled under cover of federal support to flood the market with cheap and worthless imitations of the official emblems we shall all be forced to some new method of fraternal recognition,—and who wants to be tattooed?

Radio and Culture

BIOLOGISTS, being fairly intelligent human beings, are interested in the affairs of daily life. Among these none has become more useful and accepted than the radio. To it we turn for information and relaxation. Through it vicariously we take part in the athletic, the political, the cultural life of the times. That it is capable of abuse there is no doubt. This is no valid argument against it, any more than it would be a valid argument against printing, medicine, philosophy or poetry. Abuses may,—in a nation of intelligent people,—be legislated out of existence. It would be a short-sighted policy, however, to disrupt and disorganize the whole system of commercial support for radio broadcast in order to cure the abuses. Somehow or other, a nationally controlled radio system, with a Federal Board preparing all programs, does not seem in accord with our American ideals. The results would most probably be "stale, flat and unprofitable." Imagine for yourself the sort of entertainment which would emanate from a national system headed by one senatorial banker, and composed of one agricultural congressman, a delegate of some militant woman's organization, an officer of the Parent-Teacher's Association, a psychiatrist and a college professor!

Our Expanding Fraternity

FEARS are being expressed that the expansion project initiated at the Council meeting is going to plunge Phi Sigma into a reckless welter of new chapter adoptions. Such fears are groundless. They would be well taken if there were any danger of it. The danger, however, seems remote. In the first place, there are not, and it is to be doubted if there ever have been, hordes of natural history societies looking avidly at us in the fond hope that Phi Sigma might incorporate them into its fellowship. Secondly, the present membership of Phi Sigma does not seem to be over-enthusiastic about encouraging such groups to enter our society. Finally, most Colleges are hopelessly over-organized as it is. Whether the well meant plans of the Council are going to bear any fruit at all is a question. Whether Phi Sigma can continue to exist on its present curtailed income, without the occasional boost a few installation fees give its finances, is also a question. The fact that we must skimp and save on the BIOLOGIST, cutting it down to two issues a year, should be warning enough as to the way in which our smug self-satisfaction is apt to lead us.

Help Wanted!

THE open season for speech-making is at hand. Many an instructor, associate or full professor will be making speeches for commencements, or before societies, in which the message would be of wider interest than merely to the group for which it was originally prepared. The Editor would like to receive copies of such addresses. When useful they will appear in the BIOLOGIST. If not, they will be gratefully returned.

HONORS - GRANTS - ELECTIONS AND APPOINTMENTS

Dr. Rollo C. Baker, (Alpha '15) of Ohio State University has been appointed chairman of the department of anatomy in the College of Medicine.

Dr. Edward D. Crabb, (Beta '25), who is associate professor of biology at the University of Colorado, has received a grant from the National Research Council to aid in his work on the comparative spermatogenesis in four species of viviparous snails.

Dr. Earl Baldwin McKinley, (Beta '20), of George Washington University, has been elected an incoming member of the council of the American Association of Pathologists and Bacteriologists.

Dr. Paul S. Welch, (Beta '23), has been elected Vice-president of the Ecological Society.

Dwight B. Demeritt, (Delta '24), formerly professor of forestry in the University of Maine, has recently been promoted to be head of the department.

Dr. William H. Eyester, (Delta '25), has been elected to head the General Section of the Botanical Society of America.

Dr. James G. Dickson, (Zeta, '17), was elected by the members of the American Society of Agronomy, as one of its representatives on the council of American Association for the Advancement of Science.

Dr. C. Russel Burnham, (Zeta '24), has been awarded a Yale Sterling fellowship to investigate meiosis in maize plants.

Dr. S. W. Ransom, one of Iota's galaxy of honorary members, and now at Northwestern University, has been the recipient of a grant from the Ella Sachs Plotz Foundation for research on the production of catalepsy in cats by making incisions behind the mamillary bodies.

Dr. John Paul Visscher, (Iota '21), of Western Reserve University, has been awarded a grant-in-aid by the Committee on Scientific Research of the American Medical Association for his work on a chemical test for pregnancy.

Dr. E. V. Cowdry, (Iota '28), was elected first vice-president of the American Association of Anatomists at the Philadelphia meeting.

Dr. Walter C. Lowdermilk, (Mu '28) has been appointed vice-director of the Soil Erosion Service of the Department of the Interior. Dr. Lowdermilk has been attached to the California Forest Experiment Station at Berkeley, Calif.

The Rev. Dr. Julius A. Nieuwland, C.S.C., (Nu '22) of Notre Dame University has been honored with the presidency of the Indiana Academy of Science.

Dr. James E. Ackert, (Xi '26), was elected Vice-president of the American Society of Pathologists at their meeting in Boston this winter.

Dr. Adriance S. Foster, (Omega '28) has been elected secretary of the General section of the Botanical society of America.

Edward H. Graham, (Alpha Epsilon '29), has been elected secretary of the Systematic section of the Botanical Society of America.

Dr. Joseph C. Ireland, (Alpha Eta '30), professor of plant breeding at the Oklahoma A. & M. College, has received a National Research Council grant-in-aid for his work on chloroplast development in virescent kafir seedlings.

WITHIN REACH OF YOUR CHAPTER FINANCES

Initiation Insignia

Does your Chapter carry out the Ritual of Initiation properly? In other words, has your Chapter the model Phi Sigma Key and the large Phi Sigma Coat of Arms required by the Ritual? They are both in easy reach of every Chapter's finances.

The Model Key, furnished in two colored gold, costs only $1.75.

The Coat of Arms, hand-colored on 12x16 heavy paper, only $1.25.

Address all orders, and make all checks payable to the Secretary, Dr. A. I. Ortenburger, Department of Zoology, University of Oklahoma, Norman, Oklahoma.

Obituary

Dr. Thomas Huston Macbride

PSI CHAPTER regrets to report the death of one of its honorary members, Dr. Thomas Huston Macbride.

Dr. Macbride was born in Rogerville, Tennessee, July 31, 1848. He received his Bachelor of Arts degree in 1869 and his Master of Arts degree in 1872, both from Monmouth College, Monmouth, Illinois. In 1912, he received the Doctor of Laws degree from the same institution. Lenox College bestowed upon him an honorary Doctor of Philosophy degree in 1891. He was given the Doctor of Laws degree from Coe College in 1914 and from Iowa in 1929. From 1871 to 1878 he served Lenox College as professor of mathematics and modern languages. In 1878 he became assistant professor of natural sciences at Iowa from which position he was promoted to professor of botany in 1884. Dr. Macbride remained as professor of botany for thirty years. In 1914 he was made president of the University, but retired in 1916, and has since that time been president emeritus of the University of Iowa.

Dr. Macbride was well known throughout the Middle West as a lecturer, writer and educator. His studies included microscopical botany, fungi, diatoms, Pleistocene geology, Myxomycetes and the sociology of early Iowa.

While president of the University of Iowa, Dr. Macbride was elected president of the Association of American University Presidents. He was a member on the staff of the Iowa Geological Survey, associate editor of "Mycologia," member of the Forestry Association, Torrey Botany Club, Paleontological Society, Iowa Academy and the Authors Club of London.

He was author of several books on botany, including a text book, and contributed to the Iowa Geological Survey publications. A new edition of his book "North American Slime Moulds" is now being printed.

Dr. Macbride paid a high compliment to Phi Sigma when he accepted honorary membership from Psi chapter in December 1931, and every member who came in contact with him held him in high regard. He spoke before the chapter on several occasions, but the membership gained its best impression of him from a little talk he gave on "Trees" in November, 1930. The tree was, for Dr. Macbride, not simply a physico-chemical mechanism to be measured and sectioned and stained nor was its nature exhausted by a dry assemblage of taxonomic characters. When Dr. Macbride's science had done what it could, the tree still existed for him as a beautiful entity, before which he stood in awe and in reverence and in love, a constant source of spiritual refreshment.

HAVE YOU READ . . .

Alden F. Roe, (Beta '23,) has an article in the March 2nd issue of *Science*, p. 210, on the "Fixing the Print of Carbon Copies," which should be read by every member of Phi Sigma. The process would obviate the smudging of many a sheet of carbon copied materials.

Drs. Carl V. Weller, (Beta '23,) G. A. Dunlap and John C. Bugher, (Beta '24,) announce the discovery of active Trichina in heart tissue of Trichinosis victims. The article is summarized in the supplement to *Science*, April 6, 1934, page 10.

Richard U. Light, (Beta '26,) and E. L. Chaffee report a new principle of remote control in the excitation of the nervous system in the March 30 issue of *Science*.

Dr. Edwin B. Creaser, (Beta '27,) has an interesting article on North American Crayfish in *Science*, April 20, p. 364.

"Effects of Feeding Sodium Bicarbonate or Lactic Acid upon the Sex Ratio in Rats," an article by Dr. Fred E. D'Amour, (Epsilon '31), appeared in *Science*, Vol. 79, Jan. 19, 1934, p. 61.

Dr. Arthur Sperry Pearse, (Hon. Zeta '20), professor of Zoology at Duke University, gave the vice-presidential address of Section F, (Zoological Sciences) at the annual dinner for all zoologists, during the A. A. A. S. meetings in Boston. Dr. Pearse spoke on "Ecological Segregation." The address has since been published in the Feb. 23, 1934 issue of *Science*.

Dr. Leon J. Cole, (Zeta '27,) Professor of Genetics at the University of Wisconsin, whose address at the Chicago Convention of Phi Sigma in the summer of 1933 will long be remembered, has an article on Government Research in the March 2, issue of *Science*.

L. A. Moore, (Theta '28,) is co-author of a note on "Gossypol, a Cause of Discoloration in Egg Yolks," which appears in *Science*, April 20, 1934, p. 372.

Dr. Paul Visscher, (Iota '21,) is one of the five commissioners selected by the University of Ohio to establish the F. T. Stone Laboratory on Gibraltar Island in Lake Erie. This Laboratory will be modeled on the Marine Biological Laboratory at Woods Hole.

Dr. Charles H. Danforth, (Iota '21,) professor of Anatomy at Stanford, gave the address of the vice-president and chairman of Section H—

Anthropology, at the meetings of the American Association for the Advancement of Science at Boston. The address, entitled "Genetics and Anthropology," was published in the Mar. 9 issue of *Science*, p. 215.

Dr. C. A. Kofoid, (Mu Hon. '22,) Dr. W. B. Herms, (Mu '23,) and Dr. S. F. Light, (Mu '25,) have achieved high honors in cooperation with other Californian scientists in the production of their imposing volume recently published by the University of California Press, on "Termites and Termite Control." With the increasing economic importance of the ravages of these devastating insects, the combined efforts of this western group to attack and settle the questions of procedure, should be a matter of great interest to all biologists. It is *one of those books* which no biology library should be without.

Dr. Chas. B. Lipman, (Mu '23,) has an interesting account of aged bacteria being isolated in a living condition from adobe bricks over 600 years old, in the Mar. 9 issue of *Science*.

Hans N. Hansen, (Mu '24) and C. Emlen Scott, "A Canker and Gall Disease of Gardenia; in *Science*, Vol. 79, Jan. 5, 1934; p. 18.

Herbert Faulkner Copeland, (Mu '25) had an interesting and thoughtful article on "Convention of Botanical Nomenclature," in *Science*, Vol. 79, Jan. 5, 1934, p. 11.

Prof. Tsen-Hwang Shaw, (Mu '25,) of the Fan Memorial Institute of Biology has an interesting article in the March 30 issue of *Science*, p. 295, on a new expedition to Hainan and its Five Fingers Mountain.

James Lockhart Leitch, (Mu '29) contributes the account of the winter meetings of the Western Society of Naturalists to the March 2nd issue of *Science*, p. 208.

Dr. Robert T. Young, (Omicron '24,) is with Dr. V. E. Graham of the University of Saskatchewan, co-author of a paper in the April *Ecology* on "A Bacteriological Study of Flathead Lake, Montana". Dr. Young is stationed at the University of Montana, Missoula.

Herbert L. Ratcliffe, (Pi '25,) and Quentin Geiman of the University of Pennsylvania describe reptilian amebiasis in *Science*, April 6, 1934.

Dr. G. M. Shear, (Rho '28,) and Dr. W. D. Shear, (Rho '27,) of the University of Illinois are the joint authors of an important paper on "Moisture and pH Studies of the Soil Under Forest Trees," in the April, 1934, *Ecology*, pp. 145-153.

Harold A. Schomer, (Tau '30,) working at the Trout Lake Limnological Laboratory in Wisconsin secured some interesting results which are summarized in his paper on "Photosynthesis of Water Plants at Various Depths in the Lakes of Northeastern Wisconsin," which appears in the April *Ecology*, p. 217.

Paul J. Kramer, (Upsilon '26,) has an article on the effects of soil temperature on the absorption of water by plants, in *Science*, April 20, 1934, p. 371.

J. J. Woolford, (Upsilon '29,) published an article on "A Record Size Glacial Erratic," in the November 1932 American Journal of Science.

A New Culture Medium for Cladocerans, by Walter A. Chipman, Jr., (Phi '26), offers an inexpensive and easily manipulated method of raising these useful aquatic animals. It appeared in *Science,* Vol. 79, No. 2038, Jan. 19, 1934, p. 59.

Dr. Lyman D. Phifer, (Psi '28,) contributes an article on "Continuous Phytoplankton Collection" to the Mar. 30 issue of *Science*, p. 298.

"Induced Ovulation and Artificial Fertilization in the Frog"—Roberts Rugh; Alpha Delta '32, Zoological Laboratory, Columbia University. Biological Bulletin, February, 1934.

Dr. Alfred Edwards Emerson, (Alpha Epsilon '29,) of the University of Chicago, reviews the termite book of Dr. Kofoid and others in the April, 1934 issue of *Ecology*.

ANABOLICS

(This is a new feature in the BIOLOGIST which will be devoted to letters from the members of Phi Sigma, somewhat after the fashion of the "Letters" section in our esteemed contemporary TIME. We reserve the right to reject any letter,—but try us and see just how much we can stand. Correspondents are urged to be brief,—not necessarily as brief as the verbose railroad man who was ordered to simplify the reports of his frequent derailments, and obeyed with the classical "Off again, on again, gone again, Flanagan." Make your letters snappy, and to the best interests of Phi Sigma.)

Dear Dr. Ortenburger:

At the regular meeting of Phi Chapter of Phi Sigma held on March 28, 1934, the recent letter from the National Council, regarding the proposed policy of expanding Phi Sigma, was read and discussed. The Chapter was unanimously opposed to certain policies recommended by the National Council and wishes to offer the following comments and suggestions:

1. An aggressive campaign for membership can scarcely be expected to "put individual chapters back upon a surer footing". If a chapter is suffering from lack of members it would seem to indicate that something was radically wrong with the active membership. Lack of interest probably is a chief fault in the majority of cases, and has but one sound remedy—more *careful* selection of prospective new members. Phi Chapter has always stressed this particular point. At the University of New Hampshire students consider it a distinct honor to be invited to become members of Phi Sigma. They look forward to it and strive to meet our qualifications. We have never had to go out and *seek* new material; rather, our problem is to select fairly the very best of the candidates which from the scholastic standpoint alone might be considered eligible for membership. If the requirements for membership be lower it would be an easy matter to increase the roll-call and *possibly* the chapter bank account, but at what cost? The larger the membership the more difficult it becomes to maintain the vital interest so necessary to any successful chapter.

2. Phi Sigma should "make haste slowly" in establishing additional chapters throughout the country. It is perfectly evident that something is wrong with some of our present chapters. Would it not be more fitting, therefore, to stimulate a more active interest in our present active chapters and to revive some of our inactive chapters before going ahead on a wholesale expansion program?

Phi Chapter wishes to go on record as heartily approving the action of the National Council in regard to its new policy of requiring the five dollar initiation fee to be sent to the National Secretary before ordering the engraving of names on shingles. This is a definite advance in policy, and the National Council is to be highly complimented on its action.

Sincerely yours,

RUTH E. THOMPSON,
Secretary, Phi Chapter.

* * * * *

Dear Miss Thompson:

Your letter of March 29 has been received. May I assure you that the National Council of Phi Sigma is very glad to hear from you concerning the points mentioned, regardless of whether your chapter agrees or not. We are pleased that your chapter is interested enough in national affairs to write to us.

The point which you bring up in regard to our suggestion for an aggressive campaign is a good one, and it was not our idea at all that members should be elected merely to increase numbers with the concomitant lowering of standards. Neither is it the policy nor thought of the National Council to dictate to any chapter in this respect. As you no doubt realize, the recommendation sent is to be considered as merely a suggestion; if your chapter feels that it does not agree with the suggestion made, that is distinctly the business of your chapter.

Your second point—that Phi Sigma should "make haste slowly" in establishing additional chapters—is of course pertinent. It was not the idea of the Council that new groups should be given charters in all possible cases, but rather that Phi Sigma should be more aggressive than previously in attempting to establish new chapters in the many excellent institutions in this country not as yet represented on our rolls.

Again may I thank you for your interest in this matter, and assure you that we appreciate your letter. I would appreciate it if you would explain this matter to your chapter in view of what I have said above.

Sincerely,

A. I. ORTENBURGER.

* * * * *

Dear Dr. Keefe:

Thank you for your letter and the copies of the Biologists. I shall try to send you a short article in a short time.

Phi Sigma has been a source of perplexity to me for nearly ten years. I recall paying eight dollars to some one there at California, and getting a rather poor meal. Since then I have heard nothing of it, not even having the satisfaction of having a certificate of membership, and have never been quite certain I really had become a member. I'll confess that the amount of sleep I have lost over the matter has not been great. Your letter, however, indicates that I actually am a member and not the victim of misplaced confidence of long ago.

May I assure you that you are the only editor in existence who does not dictate what or how a contribution should be written? You leave me wondering what in the world you do! I trust that you won't take this seriously.

Yours sincerely,

DAVID CAUSEY,
Associate Professor of Zoology.
University of Arkansas.

Dear Dr. Keefe:

Enclosed you will find the Omega Chapter News Letter. I hope you will receive this in time for publication.

Omega Chapter wishes to express its appreciation of the last number of the *Biologist* received some weeks ago. The publication proved to be of special interest and worth in the opinion of those here.

I should appreciate your changing the address of the Omega Chapter Secretary to Department of Zoology, University of Oklahoma, Norman, Oklahoma.

Sincerely yours,
Helen Joe Talley,
Secretary Omega Chapter.

DID YOU KNOW THAT

Dr. Howard Scott Liddell, (Beta '16) of Cornell University, Ithaca, sailed on February 17th for Leningrad, where he is to work in the physiological laboratory of Dr. Pavlov.

Dr. Dow V. Baxter, (Beta '19,) associate professor of forest pathology at Michigan University has sailed for Sweden and Denmark, where he will study pathologic forest fungi.

Dr. Alexander G. Ruthven, (Beta '30), President of the University of Michigan and of the Phi Sigma Society, spent part of the winter months in Europe visiting the various sites where the scientific expeditions of the university are at work.

Dr. Glen B. Ramsey, (Delta '17,) reports, in the March 30 issue of *Science,* a havoc working tomato rot, *Pleospora lycopersici, E. and E. March.*

Dr. W. H. Pierre, (Zeta '22,) associate professor of Agronomy at the University of West Virginia Agricultural College assists in the supervision of one of the ten Federal Erosion Control projects now being carried out. His particular problem concerns the watershed of the Little Kanawha River in West Virginia.

Prof. George W. Longenecker, (Zeta '24,) has, with Prof. Aldo Leopold, been placed in charge of the new University of Wisconsin Arboretum. The Arboretum recently received two new 20 acre tracts of land and 3,100 additional feet of shore along Lake Wingra, the smallest of the Madison chain of lakes. The total area of the arboretum now approximates 500 acres.

Dr. O. N. Allen, (Zeta '28,) is acting as head of the department of botany at the University of Hawaii in the absence of Dr. Harold St. John who is away as a member of the Mangareva expedition to the South Seas.

Dr. T. D. Mallery, (Iota '26,) of the Desert Laboratory of the Carnegie Institution recently returned from an expedition into Lower California.

Dr. Karl F. Meyer, (Mu '24), of the University of California Hooper Foundation in a nationally distributed press notice has summed up the difficulty in treating the dread parrot fever, psittacosis, as due chiefly to a silly protective pet-love and ignorance, which prefers to save the disease breeding birds in defiance to all laws of hygiene and common sense.

Dr. Wm. C. Snyder, (Mu '28,) of the University of California Dept. of Agriculture is interested in the pod deformation which results from infection of peas in California by a mosaic disease.

James Madison Dille, (Xi '30,) of Georgetown University School of Medicine, recently reported to the American Physiological Society that he has definitely found evidence of the presence of anaesthetic drugs such as veronal and amytal in the newly born following their administration to the mother in order to ameliorate the pains of childbirth.

John S. Garth, (Alpha Alpha '30), has accompanied Captain G. Allan Hancock on his steel cruiser, the Velero III, as a member of another oceanographic cruise along the Pacific coasts of North, South and Central America. Garth is the ornithologist and entomologist on the expedition.

BOOK REVIEWS

MAN AND THE VERTEBRATES, Alfred Sherwood Romer, The University of Chicago Press, Chicago. 1933. $3.00.

The drastic changes at the University of Chicago in recent years have shaken the scholastic world, more particularly in the United States. This book is one of the first fruits of the new plan. As such it aims to present a fairly comprehensive account of the evolution of the vertebrates and man without the usual technical details which, although illuminating, are hardly conducive to interested and rapid reading. In this one volume is gathered a mass of detail which up to now might require hours of search. But it is more than a mere compend. The author has not submerged his individuality in a scientific detachment which would result in a colorless document. He has, rather, achieved a fluent informal method of presentation which speaks well for the selective wisdom of those behind the "Chicago Plan."

FEAR, John Rathbone Oliver, The Macmillan Company, New York. 1933. $1.00.

If you are the sort of person who, when thought and argument find themselves distinctly beyond usual depths, are accustomed to classify such mental hazards with one damning phrase, "more metaphysics," you will not like this book. If, on the other hand, you attempt to dust off the unused portions of your mind with stimulating reading outside of your usual scientific contacts, you will find this book at least broadening. If, finally, you are willing to agree with Shakespeare that there are more things in heaven and earth than are dreamed of in our philosophy, —and are curious to know about them,—then you will like this book. It is the first modern work which the reviewer has found that integrates all the forces of normal modern life in something like a reasonable and acceptable fashion. This is specially true of such distant and heterogeneous elements as hormones and religion, sex and suicide, psychiatry and common sense. Finally, if you are afraid of religion, Hands Off!

GREYBEARDS AT PLAY, Gilbert K. Chesterton, Sheed & Ward, New York. 1933. $1.00.

Judging by the excerpts from this book in the publisher's "blurb," this is the sort of a book we would like to review. So far we have not seen a copy of it.

TERMITES AND TERMITE CONTROL, Kofoid and others, University of California Press, Berkeley, 1934. $5.00.

This work has been discussed in the "Have You Read?" section of this issue of the BIOLOGIST. If you haven't read it, or don't intend to read it,—check up on your teacher's pension!

ARCHY'S LIFE OF MEHITABEL, Don Marquis, Doubleday Doran & Co., Garden City, N. Y. 1933.

There are two kinds of biologists,—those who have a sense of humor, and those who don't. The first find relaxation in their own (or others') conscious humor. The second are generally unconsciously funny. The first will enjoy this new Archy book. The second will not understand it. There is no need, however, of going into detail about the origin of the chief characters. Let Archy, the cockroach reincarnation of a vers libre poet, speak for himself:

one thing that
shows that
insects are
superior to men
is the fact that
insects run their
affairs without
political campaigns
elections and so forth

* * *

germs are very
objectionable to men
but a germ
thinks of a man
as only the swamp
in which
he has to live

the trouble with
most people is
that they
lose their sense of
proportion
of what use is
it for a
queen bee to fall in
love with a bull

* * *

the wood louse sits on a splinter
and sings to the rising sap
aint it awful how winter
lingers in springtimes lap

* * *

the oyster is useful in his fashion
but has little pride or passion

Once you have read "Archy's Life of Mehitabel" you will want to go back to the first volume of the series,—"Archy and Mehitabel," by the same author and publisher.

THE OYSTER.

Here we have an Oyster. It is going to a church fair. When it gets to the Fair, it will Swim around in a big Kettle of Warm Water. A Lady will Stir it with a Spoon, and sell the Warm Water for Forty Cents a pint. Then the Oyster will move on to the next Fair. In this Way, the Oyster will Visit all the Church Fairs in Town and Bring a great many Dollars into the Church Treasury. The Oyster goes a great Way in a Good Cause.

EUGENE FIELD—*"Tribune Primer".*

CHAPTER NEWS LETTERS

Beta

UNIVERSITY OF MICHIGAN

Beta Chapter of Phi Sigma resumed its activities for the year October 11, 1933 when Harvey DeBruine, delegate to the National Convention at Chicago, June, 1933, gave an interesting resume of the proceedings of Phi Sigma during the Convention.

The meeting was called to order by our President, Jean Davidson Arnold who was married during her summer vacation to Doctor Chester A. Arnold of the Botany Department, University of Michigan. President Arnold proceeded to organize a very unique program for the year in which members and visiting guest speakers would participate. Of our 25 active members, nineteen were present and everything bid fair to a most successful year.

At our first open meeting, Doctor B. Jiménez of the University Hospital staff spoke on ''Sensitization in University of Michigan Students''. This proved to be a most interesting subject revealing that where medical science has failed, sensitization has proven most beneficial. These tests are given without charge to all University of Michigan students enrolled in the Health Service. These tests proved especially beneficial in cases of irritations caused by pollen and various foods. Four years of this work throughout portions of the world has proven that over half of humanity is sensitized because of one or the other of the above causes.

Other speakers were Miss Elzada Clover, a graduate student of the Botany Department, who spoke on ''Scientific Possibilities in Texas''. Miss Clover gave a brief review of the history of the State, its topography, scenic features, reptilian, avian, mammalian and plant life, especially that of the cacti upon which she is doing research at the present time. Colored slides, cured skins, preserved and fresh specimens were exhibited. Miss Clover's interesting and instructive speech was followed at our next meeting by that of Professor Peter Okkelberg, Zoology Department, University of Michigan, in a lecture entitled, ''German Universities'', Professor and Mrs. Okkelberg having spent the preceding semester and summer in Germany. He gave an outline of the educational system of Germany, comparing and contrasting it with our American system and giving much interesting information.

Members of Beta Chapter engaged in a delightful "mystery picnic" planned by President Arnold, and although the weather was quite cool, 22 members donned caps and mittens and proceeded to the unknown spot. The evening proved to be a most entertaining one, and later on, an out-of-door banquet was served. As the temperature reached a lower level, the party adjourned to the home of Mr. and Mrs. Waldo Steidtmann where games were played and everyone thoroughly enjoyed the opportunity of becoming better acquainted.

December 13, 1933 Doctor Alexander Smith, having just completed his doctoral research, gave an interesting discussion of "Two-Spored Mycenas" illustrated by slides. Following this discussion, three new members who were unable to be present at the spring initiation in 1933 were formally initiated into Beta Chapter. Those initiated were E. L. Cheatum, Chin Chih Jao of Chungking, China, and Rachael Uhvits, formerly a student of the University of California.

The regular winter initiation of Beta Chapter was held the second week of January, 1934. Our speaker was Professor William H. Hobbs, famous Arctic explorer and Head of the Geology Department, who gave a profusely illustrated lecture on "Methods of Polar Exploration". Members of Beta Chapter feel very much indebted to Professor Hobbs for this fine contribution to our program.

Immediately following Professor Hobbs' lecture the formal and very impressive initiation of 26 new members took place. The initiates were: Joseph R. Bailey, Harold J. Brodie, Robert L. Brown, Roger Conant, John S. Crosby, Helene A. Dedrick, Howard L. Faber, William C. Frohne, Elizabeth N. Giesen, James B. Griffin, Don Hayne, Mary L. Jotter, Dorothy Kopf, Kenneth B. McGlone, Andrew H. McNair, Sister M. Sylvia, Curtis L. Mendelson, Burton Ostenson, Neil D. Richmond, Chester C. Roys, Marion R. Schmidt, William H. Stickel, Donald G. Thomas, Alfred F. Whiting and Blanche Ching ji Wu.

After the ceremony, the sponsors for the newcomers were responsible for introducing and welcoming them into our society. Each sponsor took care of three initiates. This proved to be a unique method of becoming acquainted and the new members soon found themselves at home with the 29 old timers. With such a fine group of new initiates Beta Chapter looked forward to many worth while events in the near future.

Conducted tours by graduate students who have completed, or nearly completed their research, have been continued in this year's program. Doctor Henry Vander Schalie gave an interesting illustrated talk on "Some Experiences in Studies of Freshwater Bivalves". Doctor Vander Schalie pointed out several possibilities for further studies in the Phylum, Mollusca. On Febrvary 4, 1934, Harvey DeBruine reviewed a most interesting paper which was given at the National Convention of Phi Sigma in June by Herbert S. Wallace, a graduate student in Botany at the University of Denver. His subject was "Genes as Single Molecules". Following this Doctor Ernest Miner gave an illustrated talk on "Microfossils in Coal" (the subject of his doctoral thesis), and demonstrated one method used for the maceration of coal.

February 28, H. Wesley Curran talked on "Hybridization in Tropical Fish", and led the group on a tour through the Museums Aquarium where some 200 tanks of tropical fish were observed. Many questions on phases of their life history were answered by Professor Carl E. Hubbs and Mr. Curran. Henry Meyer, a graduate student working under Doctor Okkelberg, contributed several details concerning the cytology of such hybrid fish.

Our last meeting at the time of writing was one which proved of considerable interest. Our guest speaker for the evening was Mr. Rolf Haatvedt of the Archeology Department, who has spent the past three winters in active work under Director Peterson of the Michigan Archeological Excavations expedition in the Fayoum district of Egypt. Mr. Haatvedt reviewed briefly the history of the region and the progress during the ten years the University of Michigan group has been represented there. He stated that the recent visit of President and Mrs. Ruthven had done much to promote good feelings. Four reels of moving pictures were shown which depicted the culture of Greek or Roman civilization from the late fourth century B.C. to the fifth century A.D. Mr. Haatvedt's spontaneous humor throughout the lecture added much to the enjoyment of the group.

Following the meeting on March 14, an election of new members took place. President Arnold announced that Professor Ermine C. Case, Historical Geologist and Paleontologist, will be our guest speaker at our spring initiation banquet, which is to be held at the Union, May 23, 1934. All members look forward to this banquet as the outstanding event of the year.

The next meeting on the program is in charge of the recent initiates when three scientific papers will be presented. All we know about the second half of the program is a big surprise.

The average attendance of 34 members at each meeting speaks for itself concerning the quality of the programs we have enjoyed during the past year.

F. J. Hinds,
Vice President and Editor, Beta Chapter.

Delta

UNIVERSITY OF MAINE

For various reasons Delta chapter has not had any activities this year, and we have only had three meetings so far. This is due to the fact that most of the members were away to forestry camp for two months and when all are here there are only 7 members.

We are, however, about to initiate 16 new members next month, after which we will hold meetings regularly.

Kenneth E. Jones, *Secretary.*

Epsilon

UNIVERSITY OF DENVER

Epsilon Chapter held initiation services for thirteen new members on January 12, 1934. Those initiated were: Mr. Jack Cotter, Mr. James Dutcher, Miss Mariana Gardner, Mr. Donald Harrison, Miss Elizabeth Lewis, Mr. Robert Lewis, Miss Gertrud Luebke, Miss Mary Elisabeth Mann, Mr. Henry Merritt, Miss Donna Murchison, Mr. Burton Smead, Miss Julia Smead, Miss Zoe Louise Riggs. The initiation services were preceded by a banquet, and an address was given by our honorary member, Dr. John Amesse, on "Primitive Medicine in Oriental America."

The program of the February meeting consisted of short reports given by five of our new initiates on scientific problems in which they are interested. They were given as follows:

1. Mr. Henry Merritt—Character and Intelligence As Revealed by the Face.
2. Miss Zoe Riggs—The Effects of Injection of Dinitro-phenol in the Rat.
3. Miss Donna Murchison—A Scientific Scrap Book.
4. Mr. Burton Smead—Indian Sign Language.
5. Miss Julia Smead—Dwellings of Early Inhabitants of North America.

Epsilon Chapter was notably fortunate in making the acquaintance of the national officers who met for their council meeting in Denver, March 15, 16, and 17. A banquet was held at the Lambda Chi Alpha House on the evening of March 16. Following the banquet, the council members were introduced in turn by Mr. Stewart the toast master. They discussed the plans and prospects of Phi Sigma. We thoroughly enjoyed their pleasing personalities, and appreciated the inspiration behind their devoted services to Phi Sigma. The loyal support of such leaders as our national officers assure the continued success and development of our society.

CHARLOTTE DUMONT, *Secretary.*

Zeta

UNIVERSITY OF WISCONSIN

During the course of the year 1933-34, Zeta Chapter, University of Wisconsin held six open meetings. The speakers for these meetings and the subjects which they presented are as follows:

"The University Arboretum and its Research Problems" by Dr. E. M. Gilbert

"The Wisconsin Corn Breeding Co-operative Project" by N. P. Neal

"The Apple Maggot in Relation to Bacterial Rot of Apples in Storage" by Dr. T. C. Allen

"Wind and Rain Recording Machine" by T. E. Branson

"The Rearing of Syrphid Flies" by Dr. E. M. Searles,—

resumes of the research problems of the Department of Economic Entomology.

"Glimpses of the Orient" by Professor M. F. Guyer

"Wild Life Research in Wisconsin" by Aldo Leopold

"Researches in the Physical Chemistry of Dairy Products" by Prof. Sommers

The Fall initiation banquet was held in the old Madison room, Memorial Union, Thursday, November 23, 1933. At this time six men were initiated. S. B. Locke was initiated by Zeta Chapter for Alpha Lambda Chapter.

The spring initiation banquet will be held May the third.

J. A. KEENAN,
Ag. Chem. Department.

Eta

AKRON UNIVERSITY

Eta Chapter of the University of Akron, Akron, Ohio, has had a very progressive and successful year. Eta chapter holds discussion meetings every two weeks, at which time members present individual problems, papers and research activities.

Meetings open to any student of the University of Akron are held once each month. In February, Dr. Steinke's talk, included the history and development of surgery as well as the requirements of a surgeon today. In March Dr. Davis, Physician of the University of Akron, gave a talk on Traumatic Surgery.

At the present time the members of Eta chapter are looking forward to the presentation of research problems by prospective members, as one of the requirements for membership. After these papers have all been presented, the members will then present and discuss their own research problems.

Eta chapter is looking forward to the annual spring banquet at which time the new members will be initiated.

HAROLD A. ZINTEL, *President.*

Theta

MICHIGAN STATE COLLEGE

Theta chapter of Phi Sigma was very fortunate in having at its head one of the strongest leaders in a good many years for 1933-34. When President Mr. C. S. Bryan called the first meeting to order on Oct. 10 there were found to be 85 active, faculty, and honorary members on the campus at Michigan State College. The depression seemed to take an exceptionally hard blow at us here at Theta so the morale of the group was rather low and the need for a leader's strong hand was welcomed.

President Bryan with his committee outlined a very interesting and inspiring program for the year. It was felt that by holding a meeting once each month members would take more interest and an active part in the organization. Each meeting was planned for both business and pleasure as well as education. The first half of the hour was devoted to chapter business and the other half hour was turned over to a very capable speaker on some timely biological subject.

Besides the regular meetings two very interesting and well attended symposiums were given to members and the general public. The first was held November 7 with the subject for discussion being one that covered the entire field of agriculture and therefore entitled, "The Contributions of the Sciences to Agriculture". For this symposium director V. R. Gardner of the Experiment Station acted as chairman with Deans E. L. Anthony, R. C. Huston, W. Giltner, E. H. Ryder, H. B. Dirks, Marie Dye, and E. A. Bessey each giving the contributions made by their departments to agriculture. Due to the wealth of talent and interesting subject a good turn out was assured.

The second symposium was held during the winter term on Feb. 14. Dr. Pirnie of the College Station located at the Kellogg Bird Sanctuary gave an hour talk on "Biological Conservation." Dr. Pirnie has studied wild game birds for a number of years and has taken many pictures of wild life under natural conditions. This was an exceptionally interesting lecture and everyone turned out and enjoyed it.

In addition to the two symposiums Dr. Don Chalmers Lyon at the December meeting gave an illustrated lecture on "The Present Status of Research in Dental Decay." Dr. Lyon is a noted authority on tooth decay and many new and practical points were brought out in his discussion. Mr. Raymond Faust of the State Engineering Health Department at the January meeting gave a very educational illustrated talk on "Michigan Swimming Pools". He brought out the good and bad affects possible from artificial swimming pools, together with important points to consider in their construction and maintenance.

The March meeting was held March 20 following the general idea outlined at the beginning of the school year. The first part of the evening was given over to Mr. H. L. Garrad, Agronomist, Agrl. and Sci. Bureau, N. V. Potash Export Manufacturing Inc., from Chicago. Mr. Garrad spoke on "Symptoms of Nutrient Deficiencies in Plants", using colored lantern slides. Time was given at the end of his talk for discussion from the group. This part of the program was open to members and the general public. After this general open meeting the members met and took up the report of the committee on nominations for new members. (This is the plan for the March meeting but of course hasn't come off yet.)

Theta plans only one initiation for 1933-34 which will be held in May. On April 5, 1933, 19 new members accepted the bid to Phi Sigma. We don't expect any more than that number this year as we feel it is better to obtain higher quality than higher numbers of members.

GROVER BROWN, *Secretary.*

Iota

WASHINGTON UNIVERSITY

Iota Chapter feels that it has had a very full and instructive year. The first meeting of the current school year was held in October. At this meeting, a subject of great interest to all Saint Louisans, at least, was discussed. Dr. Joseph F. Bredeck, City Health Commissioner, spoke on "Encephalitis," dealing both with the chemical aspects of the disease, and with the research work which had been carried out in Saint Louis.

In November, the subject of discussion at the monthly meeting was "Trachoma". Dr. Louis A. Julianette, Professor of Applied Bacteriology and Immunology at Washington University School of Medicine was the speaker.

Dr. Joseph Erlanger, Professor of Physiology at the Medical school, spoke before the society in December. His subject was "Centennial Reappraisal of Beaumont's Observations on Gastric Digestion."

The February meeting was conducted by Dr. Frances O. Schmitt, of the Zoology department of Washington University. The topic was "Ultra Sensitive Method for Measuring Respiration of Nerve and Other Tissues."

The initiation banquet was held in March. Sixteen new members were initiated. The toast master for the evening was Dr. Edward D. West, of the Department of bio-chemistry, and the address of the evening was presented by Dr. Howard A. McCorclock. He spoke on "Diseases of Ancient Man as Revealed by a Study of Egyptian Mummies."

Carl Vernon Moore, M.D. '32, has been awarded a National Research Fellowship. He is studying with Dr. Dean, of the Department of Experimental Medicine at Ohio State University.

Ruth J. Erlinger, *Secretary.*

* * * * *

Dr. H. M. Miller, Jr. Assistant Professor of Zoology, who has been in the Paris office of the Rockefeller Foundation for the past two years has accepted a permanent position with the Foundation. In April, Dr. Miller is returning for a brief visit and to clear up his business.

Dr. Frank Blair Hanson, Professor of Zoology, has resigned to accept the position of Assistant Director of Science Division of the Rockefeller Foundation.

Several letters have been received from Robert E. Haupt (M-S. '33) who has been teaching Biology in the Woodstock School at Mussori in Northeastern India. Bob has been on several tiger and jaguar hunts, has bagged various jungle beasts and birds and is enjoying his work immensely.

(Mrs.) Mary Scott Welch, an assistant in Physiology at the University of Toronto has written that she enjoys her work and that her researches are progressing nicely.

Iota Chapter members reporting papers at the present meetings in New York are:

> Drs. H. L. White and Betty Monaghan, Dr. Frank Whom, Dr. F. O. Schmitt, Drs. Gilson and Bishop, Mr. Otto Schmitt is giving a demonstration of a new type of stimulator for nerve work.

Members of Iota Chapter reporting papers before the Missouri Branch of the Society for Experimental Biology and Medicine at the March meeting were:—Frances O. Schmitt, Helen T. Graham and Otto H. H. Schmitt; Raymond F. Halden, President of Iota Chapter (1932-1933); Mary Schmeckebier and Helen M.Aff and Leo Loeb. A paper by Hilda Friedman, R. J. Blattner and Leo Loeb was read by title.

HERBERT L. EASTLICK, *Department of Zoology.*

Kappa

UNIVERSITY OF KANSAS

Kappa Chapter has been having a successful year under the leadership of the president, Joseph W. Parker, Jr. Meetings are held twice a month with a program and a business meeting. Some of the programs consist of papers presented by Faculty Members of Phi Sigma or others who have subjects of interest to a biological organization. At other times we have shorter papers by active members who report on their own research problems. These programs always arouse interest and are, it is felt, of especial value.

The enrollment in the Graduate School is much smaller this year than last; as a result fewer students were eligible for election to membership in Phi Sigma. However, six members were initiated at our fall banquet: Marjorie Pyle, Bacteriology; William Blair and Elias Bumatay, Psychology; Rozella Blood, Clara Hartley, and Paul Kingman, Zoology. Spring initiation is to be held early in April for the following students: Homer Hiebert, Anatomy; Paul Black, Jean Dunn, Howard Gable, Benita Jones, Hugh Swaney, and George Tooley, Bacteriology; Walter Baxter, Kathryn Taggart, and Rufus Thompson, Botany; Jose Hidalgo, Entomology; Laura Cunningham, Gengo Kajawari, and Glenn Peters, Zoology.

The chapter is offering, for the third year, an award of fifty dollars for the most outstanding research of the year in Biological Sciences. The award is to be made at a dinner meeting in May at which the recipient will present a summary of his research. The award last year was granted to Harold F. Clark of the Department of Bacteriology for his studies on "A Microagglutination Test Using Filmed Particles as an Aid in the Study of Serologically Active Fractions of *B. typhosus.*

Titles of other papers given at our meetings indicate the range of our interests in biological fields: "Problems common to Psychology and Biology" by Dr. R. H. Wheeler, Psychology: "Fossils, and their Story of the Development of Life" by Dr. W. H. Schoewe, Geology; "Reptiles and Amphibians" by Hobart Smith, Zoology; "Experimental Psychopathology" by Dr. J. F. Brown, Psychology; "Monstrosities in Insects" by Milton Sanderson, Entomology; "Spiral and Circular Motion" by Robert Brigden, Psychology; "The Effect of Sodium Amytal and Sodium Thiocyanate on the Activity of the Rat" by Donald Fletcher, Psychology; "Bats Inhabiting the Caves of Barber and Comanche Counties, Kansas" by Claude Hibbard, Zoology; "Why is an Entomologist?" by Harold Peters, Entomology.

RUTH CADY, *Secretary.*

Lambda

UNIVERSITY OF MONTANA

Spring initiation in 1933 was held in the traditional location in the Rattlesnake valley. The ceremony was held in a secluded spot in the woods just before twilight. We then adjourned to a bonfire where the recently initiated members read papers, humorous and serious. A picnic supper followed. Three students and three professors were initiated.

Miss Marjorie Davis was elected as Delegate to the National Convention in Chicago. Miss Mary Young and Miss Mary Kurth also attended the Convention. Miss Davis made her report to the chapter at the first regular meeting in the fall. Beside the value of learning what scientific students the country over are investigating and accomplishing there was the added value of talking to those students and getting new ideas with which to stimulate and better our chapter.

Local fees were reduced to a minimum for this year; and the students elected were chosen more on ability and interest in conjunction with scholastic standards than on scholastic standards alone. At the annual fall initiation five students and two professors were initiated.

Talks so far this school term have been:

Miss Mary Kurth—Translocation in Plants.

Mr. Jerome Frankel—The Care and Protection of Ornamental Trees.

Miss Marjorie Davis—The Life of Darwin.

Miss Mary Brown—The Doctorate Theses of the Biology Professors (local).

Mr. Rob't Somerville—The Effect of the Internal Secretions of E. typhi and B. abortus.

Mr. Gregory Short—The History of Medicine.

The 1934 spring initiation will be different from any we have had yet, in that we are taking in a larger number of new members than we have at any previous initiation, and in the method of initiation. Before the banquet, which will be eaten out of petri dishes with forceps and scalpels we are going to have a mock initiation, the details of which are carefully guarded. After the banquet we plan on a midnight initiation in the forest beside a bonfire.

Mr. Royale Pierson has received an important appointment in the pathological branch of the National Forestry Office in Oregon. He is working on the White Pine Blister Rust.

Altho we've been unable to secure outside speakers this year the student group has responded willingly with interesting topics and we feel that we've become a more active and interested group. We've instituted two customs, new to us, that may be somewhat responsible for this feeling of renewed interest: fortnightly meetings instead of monthly meetings, and a monthly meeting of the executive committee.

MARY KURTH, *Secretary.*

Mu

UNIVERSITY OF CALIFORNIA

The School Year of 1933-34 exhibited prospects of an active program with a good turn out at the first gathering, a picnic held at Live Oak Park in Berkeley. Motion pictures were shown and a wiener roast was held in front of the open fireplace. This provided an excellent means for members in Phi Sigma from the various departments to become acquainted.

The next meeting of the year was held at the home of one of the members, Robert Usinger. At this gathering of Phi Sigma members, E. Gorton Linsley, delegate to the Convention, presented a report of exceeding interest to the Mu chapter who were anxious to hear about the Phi Sigma Convention. The speaker of the evening E. O. Essig, Professor of Entomology and Parasitology enlightened those present on the subject of food, that is, "Insects as Foodstuffs."

We are all trying to broaden our knowledge and our contacts; Phi Sigma has certainly provided an excellent opportunity for just that. During 1934 the programs have been varied. We have listened to talks, such as "The explorings in New Guinea", presented by G. E. Gullberg, who is an expert in photography, having many excellent pictures of native Guinea to show us. At another meeting Dr. E. R. Hall, Professor of Vertebrate Zoology spoke on "Fluctuations in Mannal Population". Several other lectures have been presented on a wide variety of subjects, all of which were of value and interest to the members of the society.

The Initiation Banquets of both Fall and Spring semesters have been most inviting both to new members and to the regular active members. Twenty-two new members were initiated in November, and in March twenty-eight; these will all provide fine material for Mu Chapter. The Banquets have been well attended with approximately seventy-five present. The speakers have been excellent, the toastmaster and faculty and student responses adding to the enjoyment of the occasions.

Most of the members of Mu Chapter are research students of outstanding ability, Masters and Doctors degrees being the aims of many. The publications of the members of the society have been numerous.

George A. Emerson, another member of Mu Chapter who received his M. S. in 1933, is now in Pharmacology at the University Medical School.

Dr. Ruth Okey, one of our Faculty members has been doing some valuable research on cholesterol and liver lipids, publishing in the Proc. Soc. Exp. Biol. & Med., "Effect of Cholesterol Feeding" ,"Egg Yolk and Liver Lipids", and an article that everyone should read, "Allowances for Adequate Diet at Low Cost" S. E. R. A. 107—State Relief Administration.

E. Gorton Linsley, an active member in Phi Sigma, and author of "New Genera and Species of N. A. Oemini and Methiini"—Pan-Pacific Entomologist, and "New Longicorn Beetles of the Subfamily Lamiinae," —Bulletin Brooklyn Ent. Soc.

Lawrence Short, graduate in '32 is now in the Forest Service.

R. N. Jeffrey expects to complete research on his Ph. D. problem at Minnesota under D. R. A. Gortner within the next year.

E. V. Zumwalt and J. F. Kellogg have been appointed to technical assistantships with the Division of Forestry, University of California, for Spring semester, 1934.

Wm. Marshall is working with the U. S. Forest Service in Arkansas on Stand improvement work.

ELSIE E. HALSTROM, *Secretary.*

Nu

WASHINGTON AND JEFFERSON

Nu Chapter at Washington and Jefferson has had one of the most brilliant and enthusiastic seasons in its history. We feel that we have found a prominent position for the society on our Campus, and it seems that this coincides with the new aspect of the National office.

Our initiation banquet was held on the 20th of March. The Dean of the College, and our only Honorary Member, was present. Dr. Garvey of the University of Kansas Chapter, Mr. Dieter and Mr. Porter, our Faculty Members, were also present. The speaker for the evening was Dr. S. T. Brooks, who is a Curator at the Carnegie Museum in Pittsburgh. His topic was "Human Parasites of the Pittsburgh Area". Dr. Brooks is also a member of the Kansas Chapter. The men initiated were:

B. R. Mooney, G. T. Taylor, P. C. Grana, J. F. Siegel, G. B. McMaster.

Mr. Porter, Mr. Dieter and Mr. Taylor are all doing research work with Triturus Viridecens. Mr. Porter is studying for his Ph. D. His research is problems of "Modification of normal musclature in regenerated and transplanted organs, and the possibility of organization of the regenerated musclature". Mr. Dieter is studying for his doctor's degree. He is working out the normal morphology of Triturus, nervous regeneration, and the possibility of nervous regeneration from the region of transplantation to transplanted parts.

At the last meeting of the Chapter the last paper of a series of papers on regeneration was given by Koenig. The title of the paper was "Skin Grafting".

"The Cell" is the new subject to be collectively discussed by the society. Topics on different aspects of the cell have been chosen by the members to be presented at a Seminar;

McDivitt—"Theories of the Cell".
Fowler—"Mutations of Genes".
Lieber—"Cell Inclusions".
Dalrymple—"Chemistry of the Cell".
Lang—"Physiology of the Cell".
Koenig—"Germ Cells".

As a side-issue, and due to the fact that most of our members are pre-medical students, we have been having a series of lectures on surgery by surgeons of our vicinity. These lectures were accompanied by moving pictures of operations, in conjunction with the type of surgery the lecturer was discussing.

"Bio-Slants" the scientific magazine of the Nu Chapter is about ready to make its second appearance on the Campus. Each man in the society writes an article which pertains to biology and yet attracts the interest of all students.

H. D. Fowler, *Secretary.*

Xi

UNIVERSITY OF NEBRASKA

Dr. Harold W. Manter, Professor of Zoology in the University of Nebraska, has recently returned from an extended scientific expedition made for the purpose of studying the biology of the Galapagos Islands, several other islands, and the western coasts of northern South America, Central America, and Mexico. About three weeks were spent among the Galapagos Islands alone. The expedition, which was the fourth one sponsored by Captain G. Allen Hancock, a prominent Los Angeles business man keenly interested in scientific work, covered about 8500 miles, leaving San Pedro, California on December 30 and returning on March 12.

Dr. Manter, who accompanied the expedition under the auspices of the Carnegie Institution of Washington, collected several hundred specimens of parasites of fishes, material which will furnish a valuable basis for comparative studies of marine parasites, especially in connection with Dr. Manter's work at Dry Tortugas in past summers. Captain Hancock brought back a number of animals for the San Diego Zoo. Other members of the scientific staff were Dr. Waldo Schmitt, Dr. C. McClean Fraser, and Dr. William Randolph Taylor.

The Department of Botany of the University of Nebraska has arranged to continue certain courses in the Rocky Mountains during the first six weeks of the 1934 Summer, from June 11 to July 20. The program in the mountains will be under the immediate personal direction of Professor Raymond J. Pool, Chairman of the Department of Botany. Dr. Pool has conducted classes and served as guide for several summers in the mountains and he is familiar with the conditions and materials available for such work in Colorado.

The courses given will be of particular value to teachers of botany, biology, and nature study in the public schools and colleges as well as to college students who wish to supplement their training and to broaden their acquaintance with the field. The principal course, which will be general in scope, will utilize the wonderfully rich and varied natural resources of the mountain environment to present a broad view of modern biology with particular reference to flowering plants, forests, etc.

An advanced course will also be available for those with considerable training in plant taxonomy or ecology and who will be able to work independently or with minimum guidance. The limit in this course is ten. The place is Camp Olympus in Estes Park, Colorado.

Dr. Robert H. Wolcott, Professor of Zoology and Head of the Department of Zoology in the University of Nebraska since 1909, died on January 23, 1934, after an illness of two months. In his death Nebraska and the country at large has lost one of the biologists of ''the Old School''. The degree of training and the broad scope that was his is seldom achieved by the younger biologists.

Dr. Wolcott's hobby was the study of the water mites, a field in which only one other American, Dr. Ruth Marshall of Rockford College, has worked extensively. Dr. Marshall received her Doctor's degree under Dr. Wolcott's direction in 1907. She has recently come to Lincoln to take possession of the extensive collections of water mites that were his.

In September of 1933 Dr. Wolcott's new book, ''Animal Biology'' was published by the McGraw-Hill Book Company.

Dr. David D. Whitney was recently appointed by the Board of Regents of the University to take the vacancy left by Dr. Wolcott. Dr.

Whitney, Professor of Zoology since 1916, has spent much time and effort studying sex and its regulation in the rotifers.

The following degrees will be granted by the University to graduates of the Department of Zoology:

Mr. Jacob Uhrich will get his M. A. with the title of his thesis being "Hybrid Vigor of Rotifers". His work is being done under the direction of Dr. D. D. Whitney.

Miss Marion Luhman will get her M. A. degree under the direction of Dr. H. W. Manter. Her thesis is "The Trematodes of the Loggerhead Turtle".

Miss Elly M. Jacobsen, whose thesis will be on "The Digestive Tract of the Deep Sea Fish, *Coelorhynchus carminatus*", will get her M. A. degree under the direction of Dr. I. H. Blake.

Miss Brigitta E. Koerting's thesis will be on "The Histology of the Digestive Tract of the Deep Sea Fish, *Hipsicometes gobiodes*". She will get her M. Sc. degree under the direction of Dr. I. H. Blake.

Elmer Palmatier, *Secretary.*

PI

EMORY COLLEGE

The Pi chapter of Phi Sigma is pleased to report some of its interesting activities of the current school year. The meetings of this chapter have been both inspiring and profitable to its members. We entered upon the activities of the year with a meeting held at the home of Dr. R. C. Rhodes, professor of Biology at Emory. Our speaker for the occasion was Dr. H. W. Cox, president of Emory University, whose subject was "What it Takes to Become an Educated Individual". His discussion was very stimulating and provided some thoughts which were most significant to those who are involved in the process of obtaining a well-rounded education.

Five members were initiated into our chapter at the December banquet. At our banquet we followed a very unusual and enjoyable procedure. The theme topic was "Evolution—Past, Present and Future." Dr. W. B. Baker of the Department of Biology gave a brief description of evolution of the past in accordance with an entirely new idea, and Dr. Rhodes, also of the Department of Biology, discussed evolution with equally as great a departure from conventional thought. The neophites presented a short skit on evolution. The whole program had a decidedly humorous turn.

Dr. J. C. Sandison, an Atlanta physician, talked on "Tissue Culture, Methods and Results" at our January meeting. He discussed some of his observations on living cells *in situ* of the ears of rabbits. Dr. Sandison did some very interesting work on living tissues with Dr. Clark who is now engaged in such work at Pennsylvania.

Speakers at other meetings were Dr. R. E. Loemker of the Department of Philosophy at Emory and Dr. R. H. Fike of the Steiner Cancer Clinic of Atlanta. Dr. Loemker's subject was "Which Will Save The World, Science or Philosophy?" This topic suggests a conflicting attitude, but the discussion was a very intelligent one. He reached the ultimate conclusion that perhaps neither would save the world, but both could better it. Dr. Fike spoke on "The Probable Cause and Treatment of Cancer".

The local chapter of Phi Sigma has, since its organization, held an annual outing during the spring at Stone Mountain, Ga. The members of our chapter look forward to this event with a great deal of enthusiasm. This year we are planning an outing in May. One of the interesting features of this occasion will be a "treasure hunt". That is, each member will be given the descriptions of several plants and will be asked to locate the plants and name them. Stone Mountain has a unique flora and we consider ourselves very fortunate in having such a place for our out-door meetings.

One of the most noteworthy features of our activities lately has been the investment by the Pi chapter of one hundred and fifty dollars to be added to annually. The sum of money is to provide a fund to be used in sending some active and deserving member of our chapter of Phi Sigma to a research center, such as Woods Hole, for the summer months. We are deeply concerned in research here, and I consider this a most favorable step in fostering the spirit which advances the knowledge and cause of science.

We are interested in what other chapters of our organization are doing, and extend to them our best wishes.

WILLIAM S. BOYD, *Chapter Reporter.*

Rho

UNIVERSITY OF ILLINOIS

Rho Chapter, University of Illinois, was fortunate in securing Dean R. H. Carmichael of the Graduate school as the first speaker for the meetings of the year. The Dean spoke on "Some Relations of Biology to the Philosophy of Science."

Prof. C. L. Stewart, Associate Prof. of Land Economics, addressed us at our second meeting on "Recent Progress in Development in Western Europe". The members present introduced themselves to the speaker and gave short discussions concerning their major research problem.

At our last meeting Dr. A. R. Cahn, of the department of Zoology, gave an interesting lecture illustrated with color movies "Canadian Summers".

The initiates for this spring are: J. H. Quisenberry, Bernice Strawn, George Falkenburg, Clyde Wutzke, Mrs. Mary Crist, E. C. Danner, H. L. Gravitt and L. F. Miller. We also plan to increase our honorary members at the May initiation.

SUNSHINE PARK, *Sec. Rho Chapter.*

Tau

DUKE UNIVERSITY

The annual initiation banquet for 1933-34 was held on the evening of Dec. 14, 1933 and six new members were initiated. Those initiated were, Mr. D. W. Billings (Botany,) Mr. B. B. Brandt (Zoology), Mr. J. F. Reed (Botany), Miss Helen Spangler (Botany), and Miss Mildred Stites (Botany). Dr. F. G. Hall of the local chapter made the address of the evening, his topic being "A Biological Paradox".

In the evening of March 8th, 1934 the following members of the local chapter were initiated as members of the local chapter of Sigma Xi: Mr. C. G. Bookhout and Mr. N. E. Rice, and as associate members Mr. B. B. Brandt, Mr. R. Harkema and Mr. K. C. Kates.

Following the policy of the local chapter of having at our regular meetings reports of research-in-progress, the following reports have been made during the current year.

Dr. H. S. Perry—"Some methods of genetical study as shown by certain examples in maize".
Mr. R. Harkema—"Some parasites of rodents of the Duke Forest".
Dr. H. J. Oesting—"Succession in abandoned fields".
Mr. Paul Reddish—"Soil Protozoa of Duke Forest".
Dr. A. S. Pearse while attending the December meetings of A.A.A.S.

in Boston made the Vice-Presidential address before section F. His topic was "Ecological Succession".

Dr. Bert Cunningham has recently published a paper on "Amphicephalus Reptiles". Dr. Cunningham will direct research in Endocrinology at Cold Spring Harbor Biological Laboratory during this coming summer.

Mr. T. S. Coyle recently accepted a position with the U. S. Forest Service.

Dr. H. L. Blomquist and Dr. H. F. Oesting are preparing "A Guide to the Spring Flora in Lower Piedmont in North Carolina".

Mr. B. B. Brandt with Mr. C. F. Walker recently published a paper on "A new species of *Pseudacris* from Southeastern United States".

Miss Helen Butts has been appointed instructor in Zoology at Wellesley College for the coming year.

Dr. F. G. Hall is continuing his research on "The Formation of Haemoglobin". He has recently published two papers on the subject.

Dr. D. L. Hopkins announces the birth of a baby boy.

K. C. Kates, *Secretary.*

Upsilon

MIAMI UNIVERSITY

As we begin the last quarter of the year Upsilon chapter will complete a most successful year. During the past seven months we have succeeded in bringing to the Miami campus several well known men of science. Dr. Charles J. Chamberlain of the University of Illinois gave an illustrated lecture on the "Culture Value of Travel" to a large group of Phi Sigma members and friends. At the fall initiation Dr. J. Hobart Hoskins of the University of Cincinnati addressed the group with an illustrated lecture on American Coal Measure Plants. Dr. David A. Tucker, Jr., of the Medical College of the University of Cincinnati presented a paper entitled "Medicine as a Biological Science" at the spring initiation of eight pre-medical students into Upsilon chapter of Phi Sigma.

Upsilon chapter sponsored a showing of three films of Biological interest at the local theatre during February.

We feel that much has been accomplished in fostering interest in biological science by introducing into our program for the year several student speakers. The foremost of the papers presented by these students was presented by Mr. F. T. Lang, M.A. entitled "Critique of a Sectarian Attitude toward Eugenics".

Plans are now being made for the annual spring field trip into surrounding territory of biological interest. This will close another successful year of Upsilon chapter at Miami University.

LILLIAN BEAM, *Secretary.*

Phi

UNIVERSITY OF NEW HAMPSHIRE

Last spring term, eight new members were elected to Phi Chapter. At that time we had a total of sixty-four active members. The officers elected for the year 1933-34 were:

President: Walter Batchelder.

Vice President—Miriam Ryder (Miss Ryder, however, resigned early this fall and Miss Marion Jacobs was elected to fill this office).

Recording Secretary—Dexter Wilcomb.

Corresponding Secretary—Ruth Thompson.

Treasurer—Leon Glover.

Marshal—Warren Burns

Doorkeeper—Gunther Blombach.

We also elected James Conklin, who has been an active member of Phi Chapter for several years to act as Critic for the Chapter to bring to our attention suggestions for improving the activities of the chapter.

Very soon after the formal initiation, we held our annual spring outing on Goat Island, a small island in Great Bay.

At the regular meetings many interesting papers were given. Among these were some observations by Mr. Leon Glover on the raising of mosquitoes for experimental purposes and the method of keeping these mosquitoes over the winter, a feat which had not been accomplished before Mr. Glover was able to keep them over two winters. Dr. Slanetz of the Bacteriology Department talked about the role of the bacteriological laboratory in public health and in medicine. Mr. Burkhart reported interesting results of his work on the effect of certain chemicals on seedlings. An account was given of the occurrence of the basking shark at the Isles of Shoals, single specimens having been secured each year for the last two years at the Laboratory there.

During the summer, Phi Chapter sent President Batchelder to the Phi Sigma Convention at Chicago. President Batchelder presented a paper there on "The Prenatal Effect of Carbon Monoxide on Albino Rats and the Resulting Neuropathology". The experiments on which this report was based were carried on by Mr. Lloyd L. Wells, President of Phi Chapter for 1932-33, and by Miss Eleanor L. Sheehan and Mr. Robert L. Richards, both active members of Phi Chapter during their work on the campus.

Phi Sigma Weekend was again held at the Marine Zoological Laboratory at the Isles of Shoals, since many of the members of Phi Chapter attend this laboratory each year. About fifty members and guests were present at the banquet.

This fall, Phi Chapter came back to the campus with an active membership of about fifty members. Thirteen were elected in the fall. These were: Margery Phillips, William MacDonald, Gerald Perrault, Peter Chestnolvich, Warren Smith, Roger Brassard, Jane Slobodzian, William McLaughlin, Louise Glover, Mildred Conklin, Herbert Jackson, and Professor Woodward. Professor Woodward has acted as friend and advisor to the Chapter ever since the beginning of the local society. He has always been a loyal member to us and we were very glad to welcome him as a member in the national society this fall.

Pledging was held at Professor Woodward's and, as is becoming customary with this chapter, was held around the campfire. The formal initiation and banquet were, of course, held in Thompson Hall.

The mountain trip this fall was taken over the weekend of October 21 and 22, the group camping at the Forestry Cabin at Passaconway with the intention of climbing Mt. Chocura. Weather conditions on Sunday were bad, however, so the climbing was abandoned in favor of a trip to the Flume.

Other parties this year have included a Christmas Party at Professor Jackson's, a Valentine's party at Rev. Buschmeyer's, and a very pleasant sleigh ride to the Highland House.

The regular meetings have been held mostly at the various fraternity and sorority houses on the campus. We feel that the atmosphere for these meetings is most effective in stimulating the feeling of informality and in making discussion much more free. Members give short reports or papers on interesting subjects and these are followed by informal discussion by the members on the ideas brought up by these papers. These papers have included such topics as a talk by Mr. Eadie on facts concerning the short tailed shrew which he has trapped extensively and used for experiments; present theories of color vision were discussed for us by Miriam Ryder; Mr. Conklin told us about the importance of humidity as a factor in the ecology of insects; Mr. Hoyt described photography and its relation to science; Dr. Latimer reported on recent work done on the use of cytological methods in the improvement of fruits; Dorothy Barton discussed present developments in the treatment of osteomylitis. Many other subjects have, of course, been discussed but these few topics will perhaps serve to illustrate the type of work being presented by the members of Phi Chapter.

Premedical Night was held February 21 in the Commons Organization Room. Dr. Park Hoyt of Laconia, N. H. spoke on "The Medical Witness". Premedical Night is our "open" meeting when all the premedical students and others interested are invited to attend. At this meeting about a hundred were present.

Phi Chapter is looking forward to the spring term with the election of new members, and the completion of a most successful year.

RUTH E. THOMPSON, *Corresponding Secretary.*

Chi

MONTANA STATE COLLEGE

Chi chapter has been sponsoring a series of evening lectures on the Montana State College Campus. Members of the faculty deliver the lectures which are open to the public. Members of both students and faculty are very interested in these programs.

A new projector for the science building at Montana State was partially a gift of Phi Sigma. This projector is to be used by any of the science departments of the college.

Each regular meeting of Phi Sigma has a program in the form of an assigned discussion. The whole group participates in the discussion which is led by one person appointed as leader.

MAXINE WHITCOMB

Psi

UNIVERSITY OF WASHINGTON

Psi chapter has, up to the present time, initiated two hundred and forty-seven members, including: one living honorary member, twenty faculty members, fifteen alumni members and forty-one active. About one-half dozen members of other chapters have become actively associated with this chapter. Since March, 1932, we have initiated twenty-six active members and two faculty members. At the March, 1934 meeting, we elected two faculty members and eighteen active members who will be initiated in May.

Psi chapter holds regular monthly dinner meetings which are attended by from twenty-five to forty members, including several regularly attending alumni and faculty members. The customary procedure of our meetings includes a talk of scientific interest following our regular business meeting. Among these talks this year were: a report of the work of the National Convention by Mr. Robert Tschudy, Psi chapter's delegate; a talk by Dr. E. V. Lynn, recently elected to faculty membership, on "The Abuse of Drugs"; an interesting report on the annual congress of the Society of American Bacteriologists which was held in Philadelphia in December, by Dr. Rachel Hoffstadt; an illustrated lecture on "The Flight of Birds" by Dr. Robert C. Miller; and a talk on the work of the National Council at their meeting in Denver by our National Vice-Chancellor, Dr. Melville H. Hatch. The late Dr. Thomas Macbride, one of our honorary members, gave the welcoming address to the ten initiates at the Christmas meeting.

The main order of business of the January and February meetings was the adoption of a set of by-laws proposed by a committee appointed for this purpose. These by-laws purpose to organize past legislation of the chapter, and to supplement the National Constitution in such matters as are left for local decision. The sections include: eligibility for membership in the local chapter; duties of officers; meetings; elections and initiations; and expenditures. The by-laws passed a unanimous vote of the chapter at two successive meetings. Amendments must pass a majority vote at two successive meetings to become effective.

Psi chapter was able, through the help of our National Secretary, Dr. Ortenburger, to obtain complete files of the "Biologist" which we had bound in three volumes and deposited in the University library, where they are easily available to anyone interested.

Once every summer since its installation as a chapter of Phi Sigma in 1928, Psi chapter has held a meeting at the University of Washington marine laboratories at Friday Harbor, Washington. The last summer's meeting, which is typical of the summer meetings, included a dredging trip on the station boat, a banquet, a party and a picnic. Activities usually last two days. Members of other chapters are the guests of the local chapter. Last summer we had among our guests Dr. Lowell

Noland of Zeta chapter and Mr. Gail Foster, president of Rho chapter.

Our president, Mr. John Roberts, accompanied the National Vice-Chancellor, Dr. M. H. Hatch, to Corvalis, Oregon, this fall to extend Psi chapter's greetings to Alpha Mu at their installation.

Scientific problems under way are varied:

Leon Snyder is working on the Discomycetes of northwestern Washington.

Robert Techudy is looking for variations in the fruiting of various fungi in regards to difference in the nutrient media.

John Roberts studies the haploid and diploid generations of Microsperea.

William Lanphere in inoculating various types of trees with Armillaria mellea.

Gordon Alcorn is studying the Desmids of the region.

Mrs. Hortense Lanphere is doing a taxonomic problem on the aquatic Hemiptera of Washington.

Gertrude Hoppe classifies the Stone-flies of the region and would like to trade specimens from her collection for specimens from other regions.

Harriet Exline is working on the Arachnids of Washington.

Paul Thompson studies the Ctentinids.

Victor Scheffer is making a seasonal hydro-biological study of Lake Washington.

Kenneth Bravinder is working on the fauna of the Poncho Rico in the Salina Valley, California.

Charles Schwartz is studying the chemical nature of native conifer oils, working on the leaves and twigs particularly of Tsuga mertensiana, Abies lasiocarpa, A. grandis, and A. amabilis.

Russell A. Cain and Edgar A. Kelly took PhD's last June, Dr. Cain having worked out the chemical analysis of Ledum Groenlandicum and Dr. Kelly having written his thesis on the value of Senecia aureus in medicine.

Ivor Jones is studying the barbituric acid derivatives, toxicity and dosage.

William Maske is working on the chemical synthesis of some new antiseptics.

Clivedon Cox studies the alkaloids in Veratrum caudatum.

Herbert Reiter, Joy Hirschman, J. Durward Thayer, Sam Wong and Robert McPherson are working on tuberculosis under the MacDermott Foundation. Mr. Reiter is studying the immunizing value of certain bacillary antigens in tuberculosis. Miss Hirschman is working on the biology of the tubercle bacillus. Mr. Thayer is studying immunization in tuberculosis. Mr. Wong is working on the chemical fractionation of the tubercle bacillus, and Mr. McPherson is studying the effects of sodium thyro-cyanate on anaphylaxis.

Mr. Tom Clark studies blood platlets.

Wyatt Durham is studying the corals of the Tertiary and the fauna of the Eocene and Oligocene of Washington.

ELIZABETH FARRAR.

Omega

UNIVERSITY OF OKLAHOMA

The year of 1933-1934 has been one filled with interesting activities on the part of Omega Chapter. There has been a marked increase in the membership with a live interest shown by both old and new members. The programs of this year have been presented largely by members of the Chapter, and we feel that this has been of special value to the organization. Plans are now being formulated for informal presentation of reports on individual research by Chapter members.

New members taken into the Chapter in October were the following: Dr. Frank G. Brooks of Oklahoma City University, Mary Burke, J. Richard Carpenter, Dr. George J. Goodman of the Botany Faculty of the University of Oklahoma, Mrs. Inez Jeffs, Annette Kimbrough, Robert Knight, Charles L. Mount, James Phillips, Julie Weil. The Chapter took special pleasure in the initiation of Dr. Brooks, who is the National Secretary and one of the founders of our sister biological fraternity, Beta Beta Beta. Dr. Horace J. Harper of Oklahoma A. & M. College was the principal speaker at the banquet following the initiation of these members. The title of his address was "The Influence of Vegetation and Micro-organisms in the Process of Soil Development."

Members elected at the March meeting were: Wm. Webster Barkley, Daniel Bomson, Luther Brawner, Dr. James Colbert, Wilda Fritts, Pauline Hoisington, Dr. Robert Howard, Daniel J. Jones, Sam Moore, and Wm. Waldrop.

On January 9 and 10 Omega Chapter sponsored the Annual Oklahoma Biology Roundup at the University of Oklahoma. Representatives were present from the following Oklahoma institutions: Oklahoma City University, Central State Teachers College of Edmond, Oklahoma College for Women of Chickasha, Oklahoma A. & M. College of Stillwater, and Southwestern State Teachers College of Weatherford. The guest speaker of the Roundup was Mr. Alfred M. Bailey, Director of the Chicago Academy of Sciences. Following a banquet in the Oklahoma Union Ballroom Mr. Bailey spoke on "Kodaking Birds in Southern Marches". On the following afternoon he delivered a second address on "Nature Trails in Abyssinia". Both lectures were illustrated by unusually fine moving pictures. Included among other events of the Roundup were a meeting for the reading of papers, a luncheon at the Union Ballroom at which Dr. Frank M. Balyeat, Associate Professor of Secondary Education in the University, spoke on "Recent Trends in Biology Teaching", and a tea at the Beta Theta Pi Fraternity House.

Another high point of the year's program was the Christmas meeting, held at the home of Dr. A. Richards, Head of the Department of Zoology. Short talks were given by new members of the Botany and Zoology Departments followed by Christmas entertainment. The climax of the evening was the appearance of Santa Claus to distribute gifts from the Xmas tree.

At the Spring business meeting on March 14 the following officers were selected to serve during the year 1934-1935: Charles C. Smith, President; J. Teague Self, Vice-President; Helen Joe Talley, Secretary; O'Reilly Sandoz, Treasurer. The new president served very efficiently as vice-president during the past year.

Omega Chapter sends greetings to the other chapters of Phi Sigma!

HELEN JOE TALLEY, *Secy. Omega Chapter.*

Alpha Alpha

UNIVERSITY OF SOUTHERN CALIFORNIA

Alpha Alpha Chapter of Phi Sigma, on the campus of the University of Southern California held its first meeting of the year at the home of the vice-president Mrs. Lilla Armstrong Friday, October 13th, 1933, 8:00 P. M. Miss Archie McLean, the chapter's delegate to National convention, held in Chicago, gave a complete full and interesting report on the proceeding, after the report members present were called upon to give an account of their summer experiences. Many interesting and fascinating stories were told for nearly every one had spent the summer in travel or scientific work. All present expressed to Mrs. Armstrong a delightful evening which had been enjoyed.

The November meeting was a business meeting held November 10, at the Science Building on the Campus. The December meeting was held on the eighth, after the business meeting, the prospective members gave a resume of their research problems. Mr. Herbert Baker spoke on the genetic-problem. Production of inheritable mutations in Drosophila flies by xray.

Miss Miriam Brown reported on her work with a selected group of girls in determining the influence of exercise in basal metabolism rates.

Mr. Bruce Crawford spoke on his problem of identification of certain internal parasites from wild ducks in San Joaquin Valley.

Miss Sarah Eason outlined her problem with Algae, Gelidinm cartilagineun.

Mrs. Genevieve Harrison spoke of her work with the Physical Education and Nutrition classes at University High School.

Mr. Charles Herbst told of his work with opuntia maxiuma cactus in relation to the noctural and diurnal opening of the stomata.

Miss Marie Lade gave a description of routine water analysis as it is carried on in the Los Angeles City Health Laboratory.

Miss Irene Reid spoke concerning her study of the structure and function of the water nessides in mesdmryanthemay crystolinam and m. edule.

Miss Vera Townsend displayed some interesting marine algae and told how her study undertook an investigation of artain algae, their distribution and reproduction during a year interal.

Miss Vida Watkins spoke of new methods of approach to science teaching in Secondary schools involving correlation with other subjects.

The following were elected to membership:

Mr. Herbert Baker, Miss Miriam Brown, Mrs. Florence Chase, Mr. Bruce Crawford, Miss Sarah Eason, Mrs. Genevieve Harrison, Mr. Charles Herbst, Miss Martha Johnson, Miss Irene Reid, Miss Vera Townsend, Miss Vida Watkins.

The January 12, meeting was held at the University in Science Hall. After the business meeting the program followed. The speaker of the evening was Dr. F. M. Baldwin, head of the Zoology department of the University of Southern California.

Presented his subject, which was a discussion of the Quantitative Equation of Metabolic Exchanges carried on in Athletes. The data was taken from experiments carried on by Dr. Baldwin and Mr. Shaw, during the last few years, with Athletes from the University.

The lecture was illustrated by lantern slides and the methods of procedure and the results were illustrated and explained in an interesting and comprehensive manner by Dr. Baldwin. Some of the material presented had been published in the Journal of Physical Education; reprints of the article were presented to those interested.

The Initiation Banquet was held Friday, February 9th at the Women's Residence Hall University of Southern California.

The following were formerly initiated into membership of Phi Sigma:

Mr. Herbert Baker, Miss Miriam Brown, Mr. Bruce Crawford, Miss Sarah Eason, Mrs. Genevieve Harrison, Mr. Charles Herbst, Miss Marie Lade, Miss Irene Reid, Mr. Richard Tibby, Miss Vera Townsend, Miss Vida Watkins.

Miss Katherine Beers and Dr. J. V. Harvey acted as Key bearers. The speaker of the evening was Dr. Paul Munz, Professor of Botany of Pomona College. Dr. Munz is an authority on Southern California taxonomy and will soon publish a book on that subject. His topic was "Geographical Distribution and Affinity of the Southern California Flora."

The lecture was made even more interesting by the exhibition of many herbarium specimens.

MRS. CORA MAE LIFE, *Secretary.*

Alpha Beta

MOUNT UNION COLLEGE

Alpha Beta Chapter at Mount Union College has had an interesting and progressive year. At the beginning of the fall term elections for officers were held with the following results: President, Howard Lakes; vice-president, Donald Ruch; Recording Secretary Margaret Bliss; corresponding secretary, Margaret Knowles; and treasurer, William Anderson.

A mid-year initiation was held for eight candidates and now the total number of active members is twenty-five. Regular meetings of the Chapter are held every two weeks. Usually we meet in the Fraternity and Sorority Houses but sometimes we assemble in the Biology Laboratory for illustrated lectures or instructional experiments.

We are happy to announce that after a year's illness at the United States Marine Hospital, Cleveland, Ohio, our beloved Dr. Scott, who is counsellor and friend to all of us has returned to his regular position and is going along much as usual.

Dr. Carl M. Johnson who served for three years as an associate professor at Johns Hopkins University and who is now a Pathologist in the United States Government Hospital in Panama addressed us in the Fall upon the subject of "Amoebic Dysentery".

Dr. Norman R. Stoll, a graduate of Mount Union College and now of the Rockefeller Institute of Medical Research spoke last October on "Hookworm Disease".

Helen Kingsburg, Chapter member and President at the time of the installation of this chapter addressed the present organization in December.

At Commencement last June the Honorary Degree of Doctor of Science was conferred on Dr. Charles Armstrong, formerly a graduate and instructor in Biology at Mount Union College.

Dr. James A. Daniel, professor of Bacteriology at Western Reserve University Medical School is on his road home now and will address us at the next meeting probably upon leprosy.

At a meeting to be held soon, Dr. Leroy M. Butler of the United States Public Health Service who has been at St. Louis working in the control of Encephalitis (Sleeping Sickness) will speak to the chapter.

Many papers upon new and interesting subjects have been given by the students themselves.

MARGARET KNOWLES, *Chapter Secretary.*

Alpha Delta

LAWRENCE COLLEGE

Alpha Delta has initiated two new members recently. Chester Cole and Austin Schlosser, both seniors.

A list of the papers read in Chapter meetings this year include the following: "The Care and Mounting of Vertebrate Skeletons" by Jerome Watts; "The Swelling of Fibers in Making Paper Pulp" by Miss Olga Smith; "Pollination" by Edo Nihlen; "A History of Biology" by Chester Cole; a review of "One Hundred Million Guinea Pigs" by Mildred Liese; and a talk on "Cosmetics" by Professor Darling of the Chemistry department.

On April 4 and 5 Lawrence College was host to a meeting of the Wisconsin Academy of Science. Miss Olga Smith read her paper on the Swelling of Fibers in Making Paper Pulp, illustrating her talk with a series of photomicrographs which she had taken of the process.

MARGARET CAIRNCROSS, *Secretary.*

Alpha Epsilon

UNIVERSITY OF PITTSBURGH

This report is to cover the academic year of 1933-1934 as well as the last half of the year of 1932--33, and will bring up to date the activities of Alpha Epsilon.

Mr. Benjamin R. Speicher was awarded the 1933 scholarship, using it to further his studies on the development of mutant characters in *Habrobracon* at Cold Spring Harbor. Mr. Spiecher was elected president of this chapter but his work carrying him to Cold Spring Harbor permanently, Mr. Walter R. Sweadner became president for the current academic year. It was of much interest to Phi Sigma members to learn of the marriage before Thanksgiving of Mr. Speicher and Miss Katherine Gilmore of the Pittsburgh College for Women, at that time vice-president of the chapter.

Meetings are now held once a month instead of twice, the members feeling that more interest and better preparation proved more adequate. A symposium on "Biological Illustration", was held at the beginning of the season with the aim in mind of aiding those interested in publication. Dr. David Gustafson, Head of the Department of Printing, Carnegie Institute of Technology, later delivered an address along similar lines. Dr. J. F. S. Raschen of the University of Pittsburgh delivered an outstanding lecture on "Goethe's Concept of Nature". On the whole, the meetings throughout this year have been stimulating as well as of practical aid.

Thirteen new members were elected this year and the usual annual election time was changed from spring to fall. In view of the action of the National Convention in 1933, it might be well to place on record that at the most recent meeting of this chapter, it was decided that no line should be drawn in the selection of new members on account of race, color, or creed. Putting this decision into practice followed with the election of a colored member to the society.

Among the members of the chapter, mention may be made of the work being done in the Uintah Basin, Utah, mainly by members of the Carnegie Museum staff. Dr. and Mrs. Edward Graham spent four months there during the summer of 1933, collecting and noting botanical material. Mr. and Mrs. J. K. Doutt conducted studies at the same time on mammals, later continuing such work in the San Francisco Mountains of Arizona. Mr. John Burke, accompanying Mr. Leroy Kay worked on fossils. Dr. I. P. Tolmachoff and Mr. E. R. Eller (newly elected) worked along the same lines, but mainly with invertebrate paleontology. Headquarters for the entire group was at Vernal, Utah.

Dr. Leroy K. Henry, assistant in the Carnegie Museum Herbarium is continuing his work on mycorrhizae. He was married to Miss Elinor Shatz of Bellevue, Pa., this winter. Dr. Warren R. Witz spent some time collecting algae on a trip to New Haven, Connecticut this summer. Dr. O. E. Jennings, having carried on his usual class work at the University of Pittsburgh Lake Laboratory at Erie, Pa., made some collections and observations on Presque Isle during the latter part of the summer. He is now engaged, accompanied by scientists in other fields, in preparing for the meetings of the A.A.A.S. this coming winter in Pittsburgh. Dr. William R. Van Dersal has recently completed his studies on aquarium plants and is resuming his work on the Myxophyceae.

Mr. Walter R. Sweadner spent the summer on a biological survey through Michigan, Minnesota, Manitoba, and Ontario to determine the ranges and relationships between the large silk moths, *Platysamia cecropia, P. columbia,* and *P. nokomis.* Cross matings were obtained and sufficient data to complete the study of hybridization in relation to the phylogeny and distribution of the genus. Collections of the invertebrates, amphibia, and plants were also made. Dr. and Mrs. L. K. Darbaker spent some time at the Solomon Island Biological School and also collected fossils at Calvard Hill.

Dr. Andrey Avinoff in the company of his nephew, Mr. Nicholas Schoumatoff spent a month in Jamaica during late summer, and while there made a collection of 3300 specimens of Lepidoptera including the majority of representatives of Rhopalocera of the island and an extensive new series of Heterocera. Several new species of the latter group will be described from the collection as well as an apparently new Cataclysta. A survey of this group and related forms was undertaken, and for the study photographs were secured of all species and forms available in leading museums of America and the British Museum, the latter having the types owned by Sir George Hamson. Photographic material from the Carnegie Museum and from the National Museum was obtained and prepared by Mr. W. R. Sweadner. The finding of new

Cataclysta on the island made possible the preparation of a revision of these Pyralids, a group which has never been treated monographically as a whole. Heretofore the great majority of species in the group have never been figured.

Publications other than those noticed in meetings of biological societies include:

"Flora of the Kartabo Region, British Guiana", by E. H. Graham, in the Annals of the Carnegie Museum, 22:17-292, plates L-XVII, and index, 1933. Issued in February, 1934 .

"Mycorrhizae of Forest Trees and Shrubs", by L. K. Henry, in the Botanical Gazette, 94:791-800. 1933.

"Species Through Hybridization", by W. R. Sweadner, appearing in an early number of Entomological News.

"Effects of X-Radiation on the Production of Mosaic Males and on Sex Ratio in Habrobracon" by R. J. Greb in the American Naturalist, 67:88-93. 1933.

"Effects of Temperature on Production of Mosaics in Habrobracon" by R. J. Greb, in the Biological Bulletin, 65:179-186. 1933.

William R. Van Dersal, *Editor.*

Alpha Zeta

WILLIAM AND MARY COLLEGE

This year Alpha Zeta chapter claimed twelve new members. Initiation will be held April 13, 1934 and a banquet will follow at The Colony Inn in Hilton Village. The candidates for initiation are: Lorraine Emory, Louise Herndon, Lloyd Hill, Fred Garriss, Harrell Pierce and Margeurite Stribling. At the fall initiation Ruth Engel, Virginia Clementson, J. O. Manly, William Mitchell, Joseph Pollard, and William Hart Woodson were initiated into active membership.

At present Allan Kennedy is working with Dr. Davis on linkage in the inheritance of *Impatiens balsamina.* Arthur Rich is making a synoptic collection of insects and Elizabeth Burger is working with aquatic insects.

Alpha Zeta will be represented at the Virginia Academy of Science, which meets May 4 and 5 at Winchester, Virginia, by a few papers and some exhibits which have not been decided upon.

Elizabeth Burger, *Secretary.*

Alpha Eta

OKLAHOMA A. & M. COLLEGE

At fall election we initiated thirteen (13) members into Phi Sigma. After the initiation ceremony we held a banquet at which the members and pledges were addressed by Dr. Goodman of Oklahoma University on the Distribution and Evolutionary Tendencies of the tribe Polygonaceae. At spring election we initiated six (6) members and at the spring banquet which followed the initiation we were addressed by Dr. Harper of Okla. A. & M. on Water Clarification and Purification. The meetings of the chapter have been very interesting and we have a number of very interesting talks.

Due to the condition in which the new officers found the organization, most of the time has been spent straightening the thing out consequently not much that would be of interest to the national chapter has been accomplished.

I might at this time include a list of the new officers of Alpha Eta. They are:

President, Jo. F. Wood; Vice-President, Jesse Murrell; Secretary, Earl Pritchard; Treasurer, Bob Moore.

Our former secretary, Maurine L. Jones, left today for a position with Mayo Brothers Clinic, Rochester, Minn.

Jo. F. Wood, *President.*

Alpha Theta

STATE COLLEGE OF WASHINGTON

Alpha Theta chapter has been meeting as the guest of Sigma Xi in a series of dinner meetings this winter and spring. A number of very interesting illustrated lectures are included in the program. At the January meeting Dr. M. G. Hoffman of the Geology Department spoke on "The Evolution of Planetary Hypotheses". In February, Dr. R. L. MacLennan of the Zoology Department gave the address on "Activities of Living Cells", using motion picture films procured from Dr. Robert Chambers of New York University in illustrating his talk. Dr. Charles S. Holten, U. S. D. A. Agent stationed with the Department of Plant Pathology, spoke at the March meeting, his subject being "Sexuality and Genetics of Oat Smut Fungi". The speaker for April is to be Dr. Paul Anderson of the Physics Department, whose topic is "Crystal Growth". Dr. MacLennan and Dr. Holten are members of Phi Sigma. The meetings have been well attended.

On January 25, four new members were initiated. They are: Haakon Bang, instructor in Pharmacy; E. I. Robertson, graduate student in Poultry; Otto F. Schnellhardt, graduate student in Plant Pathology; and Hugh C. Vincent, instructor in Pharmacy.

Six Phi Sigma members were elected to membership in Sigma Xi this spring. Kenneth Baker, Plant Pathology, and Harold Gerritz, Agricultural Chemistry, were elected to full membership, and Rolland F. Cohee, Agricultural Chemistry, Oliver Leonard, Botany, and Paul Vlasoff, Soils, were elected to associate membership.

Arden W. Jacklin, B. S. '33, was recently appointed Junior Agronomist in the Soil Erosion Service. He is stationed here at Pullman, working on the Palouse Erosion Project under Mr. W. A. Rockie.

Gilbert Blunt, past secretary of Alpha Theta chapter, is teaching in the Garfield, Washington, High School.

Melvin Hougan, B. S. '34, is manager of the State College Poultry Plant.

Howard Hopkins, B. S. '33, passed the Junior Forester Civil Service Examination last fall, and was assigned to Land Classification work in the East.

W. K. Smith, Ph. D. '32, is at the University of Wisconsin on a National Research Council Fellowship in Plant Breeding.

Al Snow, B. S. '33, is on a fellowship at Yale University in Plant Physiology.

Lloyd Doneen is an associate in research at the University of California at Davis. He is working on irrigation of sugar beets.

It is rumored that one of the local Dairy Professors has a motto hanging in his office that reads: "All that I am or ever hope to be, I owe to udders".

EDWARD M. GAINES, *Secretary.*

Alpha Iota

BUCKNELL UNIVERSITY

Iota chapter has difficulty in maintaining a large group of interested folk for the reason that among the undergraduates there is not sufficient time for outside activities which are time-involving and furthermore we never have a large group of individuals who measure up to the scholastic attainments which have been set by the charter members of our chapter.

During the current year we have an active membership of twelve students and four faculty members. With a group so small I feel that we have accomplished a great deal that we may be proud of.

It has been the effort of this group to plan its programs in such a way that others than the members may partake of the good things of biological interest that are brought to the campus under the auspices of our Society. It is hoped that by giving the outsiders who are biologically minded an insight into the aims and purposes of our group and its actual workings, that they may be stimulated to become members of the group at some later time when they have fulfilled the requirement of the organization which calls for the equivalent of two years of college credit, with one-fourth of the work done in biological science. The plan has been quite fruitful and it is to be anticipated that the coming year will show the results of our endeavors.

At the present time the bulk of our membership is made up of persons primarily interested in biology in its application to medical science and for this reason a number of our programs have been built up with special attention being paid to this interest. Dr. Harold Foss of the Geisinger Memorial Hospital of Danville, Penna., who is a well known surgeon in this part of the country, was kind enough to bring us some words of advice on the subject of ''If I Were a Pre-Med''. The meeting at which he spoke was opened to all those that were interested and a crowd of almost a hundred heard him. This entire number was drawn from among the biology students of the school and the interest and satisfaction manifested at this meeting has prompted us to plan others of like character.

Just before the beginning of the second semester of school, Phi Sigma held another open meeting at which Dr. Jodzis, Prison Physician at the Eastern Penitentiary of Pennsylvania, was the guest speaker. At this time Dr. Jodzis imparted to us a great deal of information of the sort that few people are able to obtain first hand and no great number of individuals are even able to obtain reliable information pertaining to the workings of penal institutions. The speaker presented us with a very intimate picture of the biological factors which enter into prison management. We were highly privileged upon this occasion for in addition to Dr. Jodzis we had with us, Dr. Wilson who is a member of the staff at the United States Northeastern Penitentiary, and also the psychiatrist of this same institution. These three gentlemen entered into an earnest discussion of the biological aspects of prisons and the results were extremely profitable to all those present.

The last few meetings have been taken up with original papers prepared by some of the candidates for active membership into Phi Sigma. This chapter has adopted a plan whereby all papers which are presented to the organization must be acceptable to the group, the determination of the papers acceptibility being carried out by a committee of members which quizzes the candidate at the time of the presentation and ascertains the thoroughness with which any paper has been prepared. By this means we find that a great deal of stimulating information grows out of every problem attacked and furthermore a more discriminating attitude toward scientific research is built up. It is anticipated that an initiation ceremony will be held sometime within the next month.

The chapter is looking forward with much enthusiasm to an outing to be held at one of the professor's cabins within the near future. A similar affair held last spring was highly successful and there is every expectancy that good food and fellowship will produce a spirit that will be advantageous to the future of our endeavors in the interest of Phi Sigma.

If our plans materialize, Iota Chapter of Phi Sigma, will be host to a select group of guests, whom it will invite to participate in an excursion to Kitchen's Creek which is one of the beauty spots of Pennsylvania and located at a distance of some eight miles from Bucknell. One visit to this spot invites another and the present group of Phi Sigma's is eager to revisit this lovely haven of rare wild flowers and plants. The geologist, the botanist, and the ornithologist is equally at home in this region and each is equally delighted by the things presented for study.

Iota Chapter extends its best wishes to all its sister chapters and wishes for them a highly successful conclusion to their current plans and ambitions.

William P. Boger Jr., *President.*

Alpha Kappa

HUNTER COLLEGE ALUMNAE

Alpha Kappa has had a rather profitable year. Our summer activities were quite varied, our chapter being well represented, we feel, at a number of biological stations and university summer sessions. Filomena Greco and Ethel Poris studied at Woods Hole. Mr. Roberts Rugh continued his research work on the effect of spectral light on embryological development at the Marine Biological Laboratory and presented a paper upon this work at one of the Woods Hole seminars.

Estelle Feld, Honor Hollinghurst, Susie Lieberman and Helen Wilhelm studied at the Cornell Summer Session. Helen Primrose, who spent last year at Cornell doing graduate work, was also at Ithaca this summer completing her problem on Ribes seeds for her Master's degree.

Miss Theodora Nelson and Margery Greene were at the University of Michigan Summer Biological Station. Miss Nelson assisted in the ornithology courses, as she has for a number of previous summers, and also continued her ornithological research.

Several of our members spent the summer supervising and carrying on nature study work, and of course, many of us joined the general exodus to visit the World's Fair in Chicago.

Our regular fall activities got under way in October with a field trip to the Palisades under the leadership of Dorothy Mossner. We combined our botanical and ornithological searching with the opportunity to hear the National Convention news from our delegate,—President Ruth Silverman. Our November meeting consisted of two reports of summer activities. Mrs. Rose Hershkowitz gave some informal biologic notes on a trip to the Pacific Coast. Jennie Glazer presented a report on Nature Study Supervision. Miss Glazer acted as head counsellor at one of the Bear Mountain Camps where the nature study work is under the supervision of the American Museum of Natural History. On the basis of her nature study projects, Miss Glazer was the only person in the state to be awarded a golden M,—the highest reward available under the Trailside Museum System. The "press agent element" in the chapter secretary insists that we add that the award was conferred by Mrs. Franklin D. Roosevelt.

In December our meeting consisted of two addresses. Helen L. Primrose presented a report on her research problem:—"A Study of the Germination of the Seeds of Ribes". We found the problem to be of rather timely interest in as much as Ribes eradication work has been recently taken over as a government conservation project. Rose di Paola gave an informative resume of the research work discussed at the Summer '33 seminars at Woods Hole.

However, the highlight of our '33-'34 meetings that have been held thus far, was, undoubtedly, our January initiation meeting. Following a dinner in honor of the initiates, seven new members, including two faculty members were initiated. The new members are:

Dr. Bernice L. Maclean, Histology; Miss Theodora Nussmann, Endocrinology; Sadie Anker, Cecelia Fortmuller, Plant Physiology; Filomena Greco, Pre-Medical; Margery Greene, Protozoology; Mildred Schweiger.

A most interesting address on "The Mechanism of Ovulation" was later delivered by Mr. Roberts Rugh. This was a report on research that is now being carried on at Columbia University on induced ovulation in Rana pipiens. Mr. Rugh is presenting his results before the April convention of the Society of Anatomists. As such Alpha Kappa felt quite honored to hear this report before its official presentation. The talk was illustrated with pictures showing the emergence of the eggs from their follicles. The pituitary-injection technique by which ovulation is induced, was illustrated with many excellent demonstrations. It was, altogether, a most profitable evening. This first meeting of 1934 was attended by a large and enthusiastic audience which fact augurs well, we hope, for the following meetings of the year.

At our February meeting Miss Donnie C. Getchell spoke on Chromatophores. The speaker stressed particularly the experimental work being done on the hormone control of the chromatophores in the Shrimp. We expect to hear Dr. Maclean speak to us on her experimental work on the Somites of Amblystoma punctatum at our next meeting. We are hoping to hear from our other new faculty initiate in the near future also. Miss Nussmann is working on the intertubular cells of the testis and their relation to secretion as studied by injections of vital dyes and pregnancy urine extracts. This work is being done at the College of Physicians and Surgeons, Columbia University.

Among our members not previously mentioned in this report, who are now doing research work are:

Dr. Frances Hallock—continuing her work on the seeds of Garrya. Her results will be in the Oxford Press very shortly.

Alma Ericcson—Morphological Studies on the Stamens of Saponaria.

Cecelia Fortmuller—Mineral Nutrition in Salvinia with special reference to Iron.

Honor Hollinghurst—Ability of Fertile Branches of Equisetum arvense to Produce Vegetative Branches.

Clara Oltmann—An investigation of the Effect of the 'Shaker Short' Gene in Mice upon Embryological Development.

Our officers for this current year are: President, Ruth Silverman; Vice-President, Marion Rositzke; Corresponding Secretary, Helen Wilhelm; Recording Secretary, Cecille Schoenfeld; Treasurer, Estelle Feld.

HELEN WILHELM, *Secretary.*

Alpha Lambda

UNIVERSITY OF UTAH

Alpha Lambda Chapter is very pleased to announce that it has had the privilege of initiating one of Phi Sigma's honorary members, Lyman Luther Daines, PhD., M.D., Dean of the School of Medicine at the University of Utah and a patron of research work in the field of Bacteriology.

Son of Robert and Jemima Seamons Daines, he was born at Hyde Park, Utah, March 15, 1883. His early education was secured in Utah at the Brigham Young College where he received the degree of Bachelor of Science. In 1908, he married Agnes Purdie, and they have become the parents of three sons and one daughter. The following two years of his life were spent at the University of Utah in graduate study on the flora of Great Salt Lake. After receiving the degree of Master of Arts in 1910 from the University of Utah, he moved to California to study at the University of California; he received his doctor's degree at this institution in 1912.

A true research worker, he has always been interested in the Bacteriological problems presented in the Intermountain West. He began his career in 1915 as professor of Bacteriology and Pathology at the University of Utah and as Utah State Bacteriologist; soon he became Pathologist of the L.D.S. Hospital. In 1931, he received the degree of Doctor of Medicine at Rush Medical College.

Never forgetting his interests in the West, he returned to assume the position of Dean of the Medical School of the University of Utah and to continue his research work. His most recent study has centered around the well-known problem of the West of the Skin Lesions of Tuberculin Reacting Cattle. Through his efforts, a great deal of research work has been done at the University of Utah on this problem, the solution of which may mean the salvaging of many head of cattle and the saving of thousands of dollars annually. Recently, Dr. Daines' interest has been attracted to the cause of Leprosy. In the Spring of 1933, accompanied by one of his research assistants, he visited the Leper Colony at Carville, Louisiana where he did considerable work.

Dr. Daines is the co-author for Community Health and Hygiene, a book published in 1930, and various scientific papers. Among his many interests is the Utah School for Deaf and Blind of which he is President of the Board of Trustees. He is President of the Utah Academy of Science, Arts and Letters and a member of the Utah Medical Association, the American Medical Association, Salt Lake County Medical Society, Utah Educational Association, Sigma Xi, Phi Beta Kappa, Beta Kappa Alpha, Phi Beta Pi, Timpanogas Club and various civic clubs.

Alpha Lambda Chapter has enjoyed a number of interesting lectures in the past three months. Dr. Clay B. Freudenberger who lectured on the "Human Body—Its Growth and Development", Mr. Lucas who recounted his experiences in Alaska, Dr. C. M. Blumenfeld who lectured on the "Growth and Development of Bones", and Dr. Orin A. Ogilvie who spoke on "Hay Fever" have been among those who have contributed to the joy and entertainment of the members of Phi Sigma.

Stephen D. Durrant, an initiate of 1933 of Alpha Lambda Chapter, received congratulations from the members of Phi Sigma in Salt Lake City on his marriage in December to Sylvia Burt, an instructor in the Department of Physical Education at the University of Utah. Mr. Durrant is an instructor in the Zoology Department of the same institution.

February 17th, following the custom of commemorating the date of installation of the Alpha Lambda Chapter, February 13, 1932, an initiation banquet and dance was held. Two pledges and fifteen initiates one of whom is Dr. Orin A. Ogilvie, a member of the University of Utah School of Medicine faculty, a prominent Clinical Pathologist, and a widely recognized authority in this field, were admitted to membership in Phi Sigma Society on this night. They are: Dr. L. L. Daines, honorary member; Dr. Orin A. Ogilvie, faculty member; Mary Donaldson Brown, Estella Calderwood, Herold Gilmore Davies, Florence Robison Ellison, Ival Vinton Goslin, Don Carlos Grayot, Minnie Elizabeth Scott Hansen, William Victor Haymond, Dilworth Harper Marchant, Lucile Rogers Marshall, Horace Sunderlin, Eldredge Richards, Jane Shields and Charles Fisher West, active members; and James William Moffett and Margaret Louisa Parsons, pledge members.

The last two months of the school year hold a number of interesting times for the members of Alpha Lambda Chapter who send their best wishes to the many chapters of Phi Sigma.

MARCELLA NEBEKER, *Secretary.*

Alpha Mu

The Alpha Mu chapter of Phi Sigma has been fortunate in being able to obtain interesting speakers for the meetings. As the material presented at these meetings was greatly appreciated by those present, a brief abstract would probably not be out of place for our news lettter.

"Dr. Ethel I. Sanborn, associate professor of botany, gave an interesting account of the fossil plants of Oregon and a resume of the new species described in her recent publication, 'The Goshen Flora of West-central Oregon', written in collaboration with Dr. R. W. Chaney of the University of California. Specimens of these and other fossil species were examined."

By Miss Elaine Williams.

"Dr. O. F. Stafford, head of the chemistry department of the University of Oregon, discussed the hydrogen isotopes and heavy water at a meeting held in Eugene. At the present time Dr. Stafford is engaged in a research problem involving the separation of the heavy water from approximately 10,000 gallons of ordinary water. The method depends upon the fact that ordinary water is more active and it will therefore electrolyze more readily than the heavy water. By repeated electrolysis, the water will become richer and richer in the heavy water. This large scale electrolysis is being made possible by the donation of excess power to the chemistry department by the Mountain States Power Co. of Eugene. Dr. Stafford plans to obtain perhaps a quart or two of the heavy water by this method. Such a large scale production should prove of great interest to biologists, because it will make suitable quantities of the heavy water available for various physiological experiments, which have already yielded very interesting results as shown by some of the recent work of Washburn and G. N. Lewis."

By Ewald Rohrman.

J. N. Shaw, department of veterinary medicine at Oregon State College, discussed the life-history, pathology and control of two flukes, presenting the result of rather recent work by the veterinary department. The liver fluke, *Fasciola hepatica*, was discussed with particular reference to its life history, method of entering the liver of the sheep, pathology caused and methods of treating the host and pasture for cure and prevention. The other fluke considered was a distomatous fluke, *Nanophyetus salmincola* Chapin, which is associated with the disease of dogs known as salmon poisoning. This fluke, which is found only in a limited portion of the Pacific Northwest, spends its immature stages in a Goniobasis snail and encysts in trout and salmon. When the infested fish is eaten raw by susceptible animals, notably the dog, fox and mink, serious pathological conditions result and the animal almost invariably dies. An effective preventive treatment, developed by the veterinary department, consists in immunizing the dogs by the use of the blood of a dog that has recovered from the disease. Moving pictures depicted the various phases of both of these parasites.

At our last meeting, R. E. Dimick, department of entomology Oregon State College, presented some of the results of his studies of the food of Oregon game fish. These studies, which deal primarily with the cut-throat and rainbow trout, are the first that have been made of the food of game fish in Oregon. A great deal of interesting data have been obtained which will be invaluable in the future rearing and liberation of game fish in Oregon.

As most of our members are rather widely distributed over the state and country it is difficult to obtain information regarding their activities. A few items that appear to be of more than local interest, however, have come to my attention.

Dr. Earl L. Packard, dean of the school of science, recently published a description of a fossil whale in collaboration with Remington Kellogg, a world authority on fossil whales. The specimen was found several years ago by Dr. Packard but not until recently were funds made available, through the Carnegie Institution, whereby a thorough study could be made. The publication, ''A New Celothere from the Miocene Astoria Formation of Newport, Oregon,'' includes a technical description of the whale-bone whale, which represents a new genus, a description of its geographical surroundings and the contemporary life of the area. The whale is only about sixteen feet long and was quite primitive, showing distinct finger joints in the flippers and well preserved pelvic bones.

A new book, entitled, ''Principles of Genetics and Eugenics,'' by Dr. Nathan Fasten, professor of Zoology at Oregon State College, has been accepted for publication by Ginn and Company. This book was written for the student and general reader and discusses the subject of genetics in both the plant and animal kingdoms.

Professor H. P. Barss, late head of the department of botany and plant pathology at Oregon State College, was recently appointed as principal botanist and associate head of the office of experiment stations in the United States department of agriculture at Washington, D. C.

Miss Elaine Wililams, president of the Alpha Mu chapter of Phi Sigma, has received the $12,000.00 fellowship awarded by the Oregon Division of the American Association of University Women. This fellowship is awarded every three years to an Oregon woman to enable her to continue with a definite research problem. Miss Williams plans to engage in further studies of botulism at the University of Illinois.

Miss Miriam Stafford, of the University of Oregon, is now at the Children's Hospital, Iowa City, Iowa, where she is carrying on part time research investigations and working in the technicians laboratory.

Alfred Taylor, of the zoology department at Oregon State College, is engaged in a problem dealing with the various effects of thyroidectomy on the adult salamander, *Triturus torosus.* Preliminary work has already revealed some unusual effects from the removal of the thyroid gland and Mr. Taylor intends to extend the work to the gonads and the pituitary glands.

J. R. Roaf, *Secretary.*

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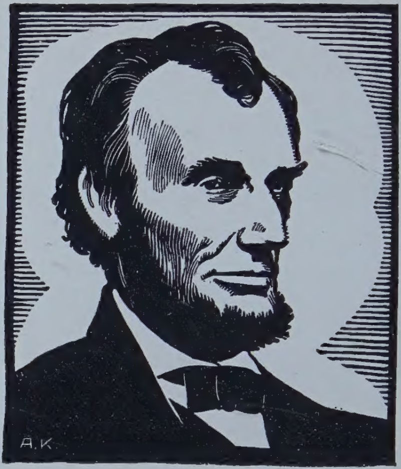

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